#4

Original Documents, Pictures, Drawings and Screen Captures

Scanned by a G3 Facsimile Machine or Optical Scanner or Screen Capture Methods **(B)**

Connected to The Inventions Adjunct Device or PC Card: **(C)**
For a Fax Machine and via Fax Modem and Circuitry that Generates Central Office Dial Tone or by Standard Auxillary Port Means-to Include USB or by Wireless Means-to include Infrared

Connected to A Packet Switched Network via Data Modem; to include Cable, Cellular and Satellite -Resident or Remote; and Standard RJ 11 Phone Line Connector or RJ 45 LAN Connector or Cable Connector or CDMA/TDMA Cellular Connection or Satellite Up Link/ Down Link Connection **(D)**

Receive Images Generated by the Fax Machine or Optical Scanner or Screen Capture Method **(E)**

Store Images in Memory Buffer(s) **(F)**

Invoke Hardware and Software process to Remove Inferior CODEC's or OCR scan codes Restoring images to Native Scanned Image State **(G)**

Store Native Image Data In Memory Buffer(s) **(H)**

Compress Native Image Data with Multi Dimensional CODEC's Resident in Eproms and ASIC. Specific CODEC's to include but are not limited to: LZW-TIFF & TIFF-FX, JPEG & JPEG, 2000, MPG, Streaming Media, Harmonic Matrix Multiplication, **(I)**

Store in Memory Buffer(s) **(J)**

Obtain Unique Electronic e-mail or IP Destination Address and public or secret encryption key for Intended Recipient from address table and key ting resident in flash memory or remotely from a data base and remote key server **(K)**

Associate Phone Number Dialed By The Fax Machine or Other Remote Device with the e-mail or IP destination address or if null Confirm destination address via device per **(K)** or PC keyboard

Store in Memory Buffer(s) **(N)**

If encryption is selected by user or by default, encrypt stored buffer of newly compressed Image data with encryption algorithm(s) stored in EPROM and/or resident in ASIC to include but not limited to
S-MIME, S_HTTP, SXML, SET, Rijndael, PGP, DES Vernam ciphers and RSA. Additionally the multi dimesional codecs of the harmonic matrix multiplication compression schemes available in this invention can be adapted to perform non-recoverable-disappearing key encryption **(O)**

Store in Memory Buffer(s) **(P)**

Invoke message encapsulation protocols stored in EPROM(s), to include but not limited to IP, TCP, UDP ,SMTP, POP3, MIME & extended MIME message types, IMAP, HTML and XML and encapsulate entire previous memory buffer(s) within appropriate protocol stacks. **(Q)**

Store in Memory Buffer(s) **(R)**

Obtain users device, terrestrial location coordinates and/or biometrics from the device hardware and software. Hash the information to create a reflective non original information data map. **(S)**

Store hashed information in Memory Buffer(s) **(T)**

Generate message headers in accordance with selected protocols and may include non-standard x headers to identify specific transport, identity and receipt verification processes and other routing and sending reception requirements. **(U)**

Send entire now completed processed contents of the previous buffer(s) to intended recipient utilizing appropriate protocols over any terrestrial or satellite communication network. Retain entire contents of memory buffer(s) and message headers for a specified period of time Entire or partial memory buffer(s) contents may be permantly archived, on premise or remotely, utilizing standard achieving media and processes. **(U)**

The reception process is the direct inverse of the sending process above for a stand alone G3 facsimile machine and in the reception mode **(A)** above may include direct printers/plotters or any other message media rendering equipment, for example 3 dimensional mold making machines

Figure 1

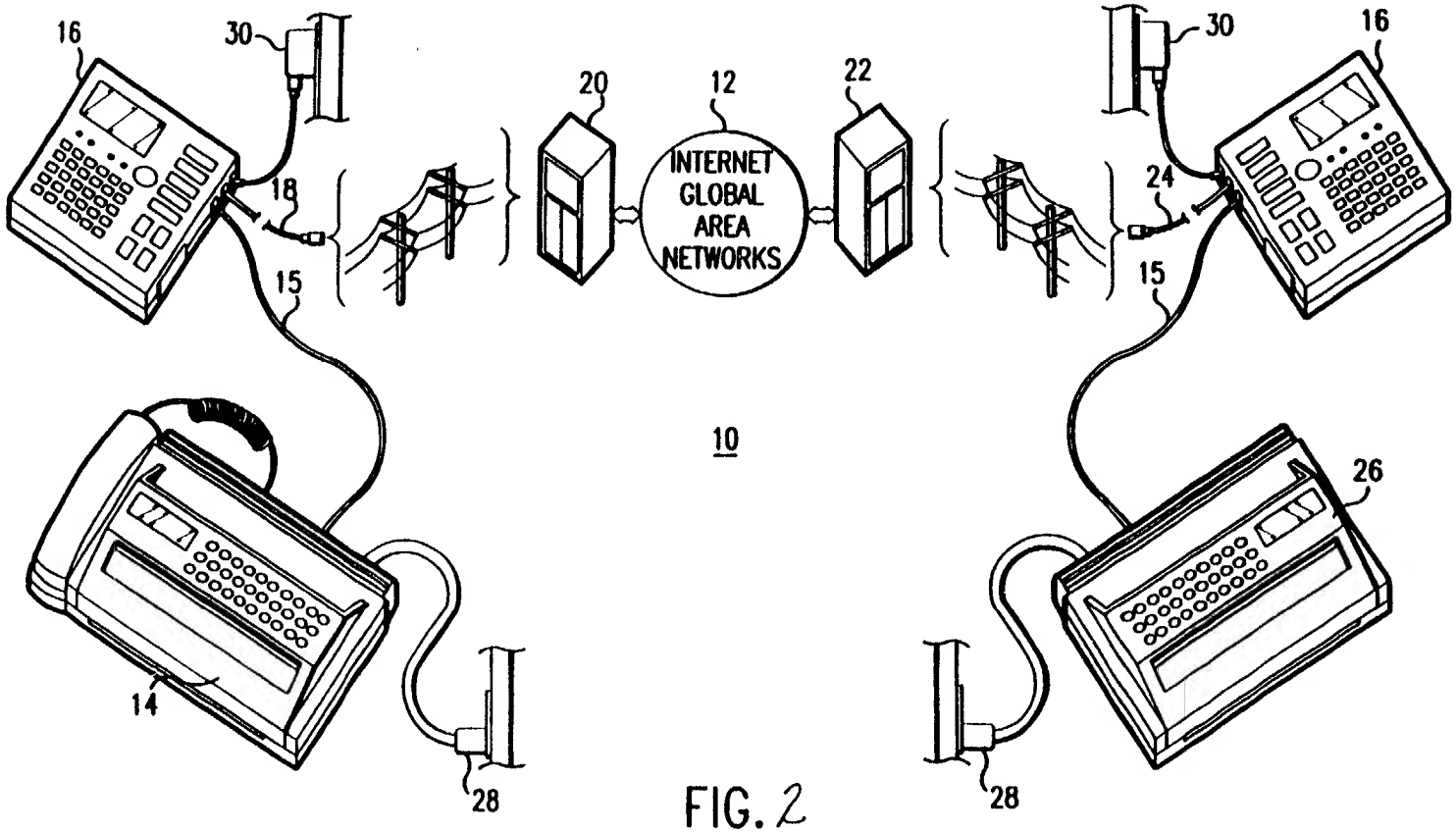


FIG. 2

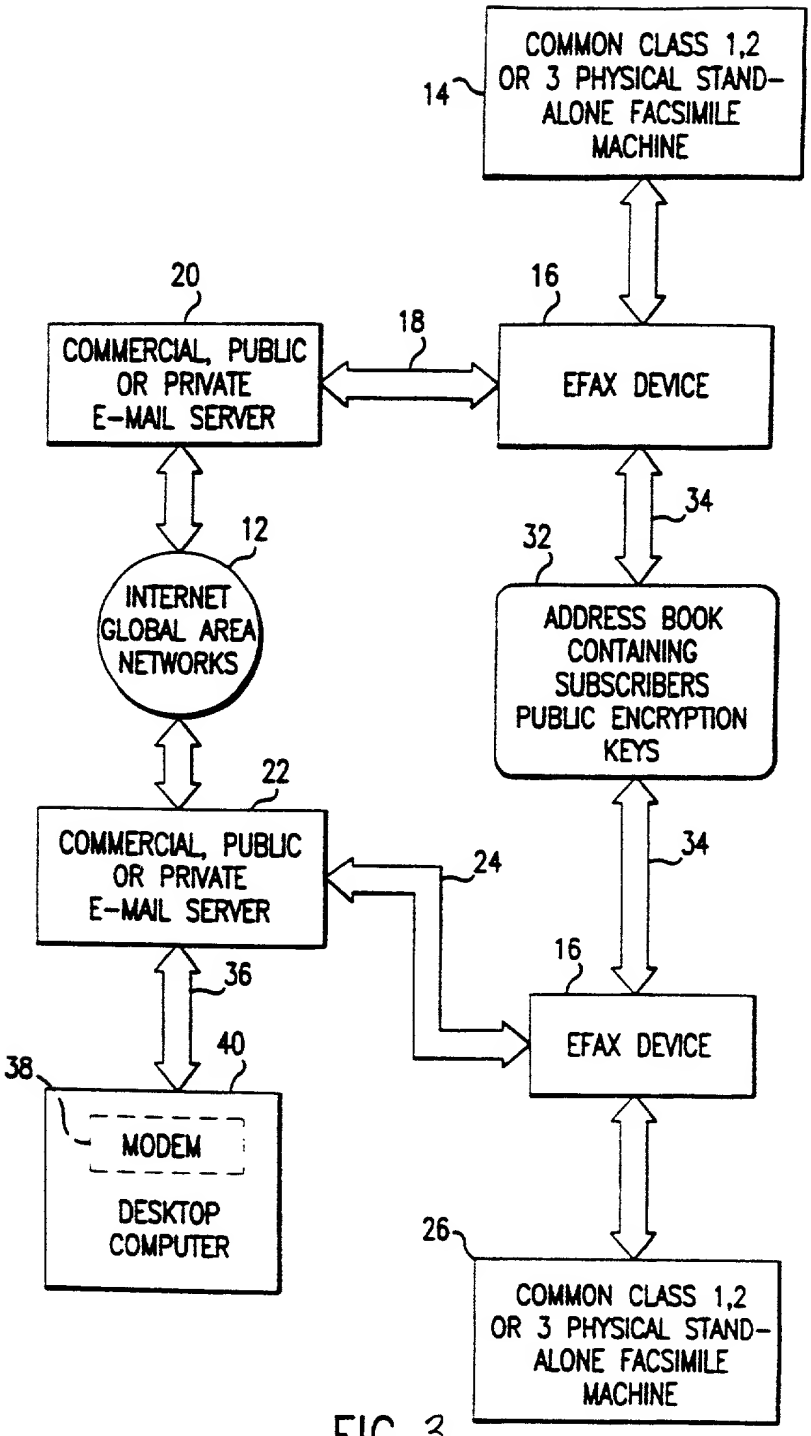

COMMON CLASS 1,2 OR 3 PHYSICAL STAND-ALONE FACSIMILE MACHINE
14
16
20
18
COMMERCIAL, PUBLIC OR PRIVATE E-MAIL SERVER
EFAX DEVICE
34
12
32
INTERNET GLOBAL AREA NETWORKS
ADDRESS BOOK CONTAINING SUBSCRIBERS PUBLIC ENCRYPTION KEYS
22
34
COMMERCIAL, PUBLIC OR PRIVATE E-MAIL SERVER
24
16
36
EFAX DEVICE
38
40
MODEM
DESKTOP COMPUTER
26
COMMON CLASS 1,2 OR 3 PHYSICAL STAND-ALONE FACSIMILE MACHINE

FIG. 3

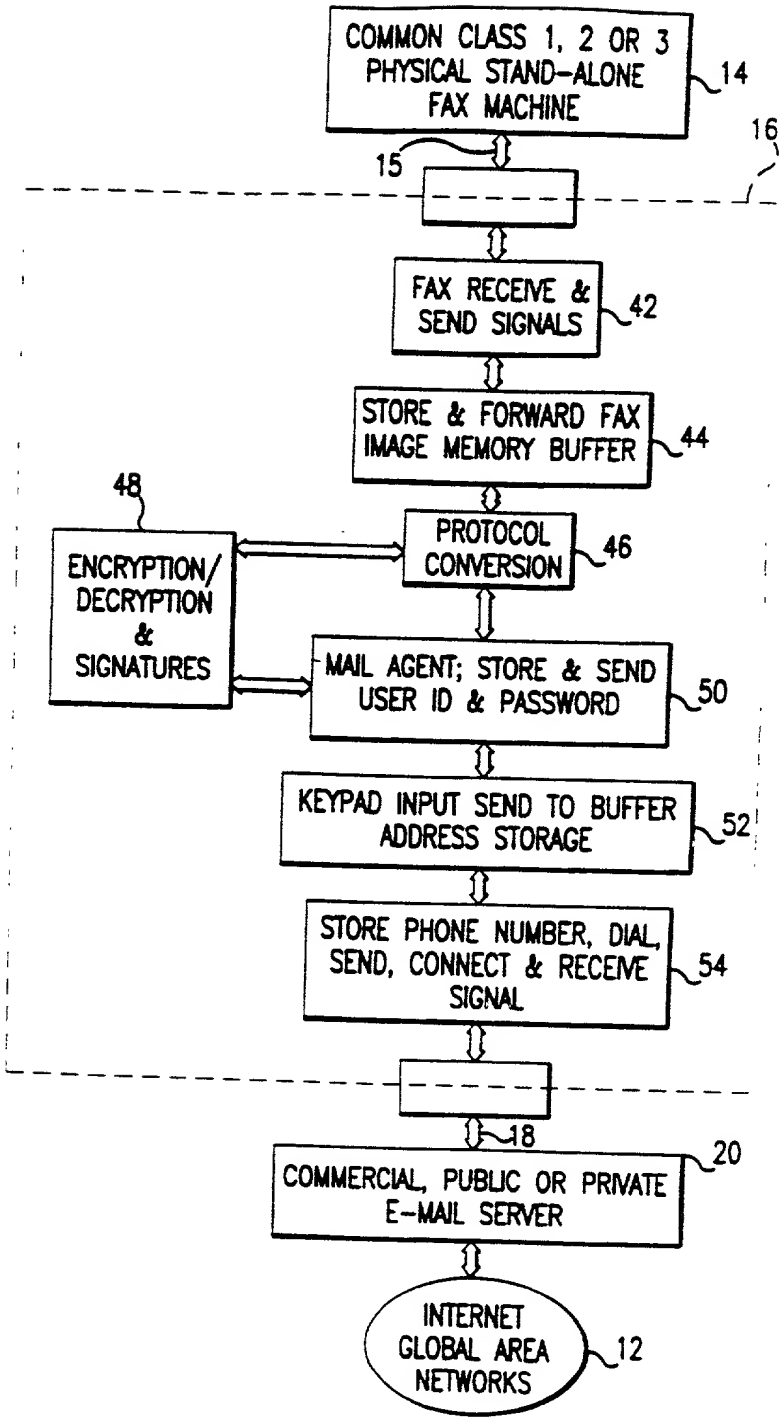

COMMON CLASS 1, 2 OR 3 PHYSICAL STAND-ALONE FAX MACHINE
14
16
15
FAX RECEIVE & SEND SIGNALS
42
STORE & FORWARD FAX IMAGE MEMORY BUFFER
44
48
ENCRYPTION/ DECRYPTION & SIGNATURES
PROTOCOL CONVERSION
46
MAIL AGENT; STORE & SEND USER ID & PASSWORD
50
KEYPAD INPUT SEND TO BUFFER ADDRESS STORAGE
52
STORE PHONE NUMBER, DIAL, SEND, CONNECT & RECEIVE SIGNAL
54
18
20
COMMERCIAL, PUBLIC OR PRIVATE E-MAIL SERVER
INTERNET GLOBAL AREA NETWORKS
12

FIG. 4

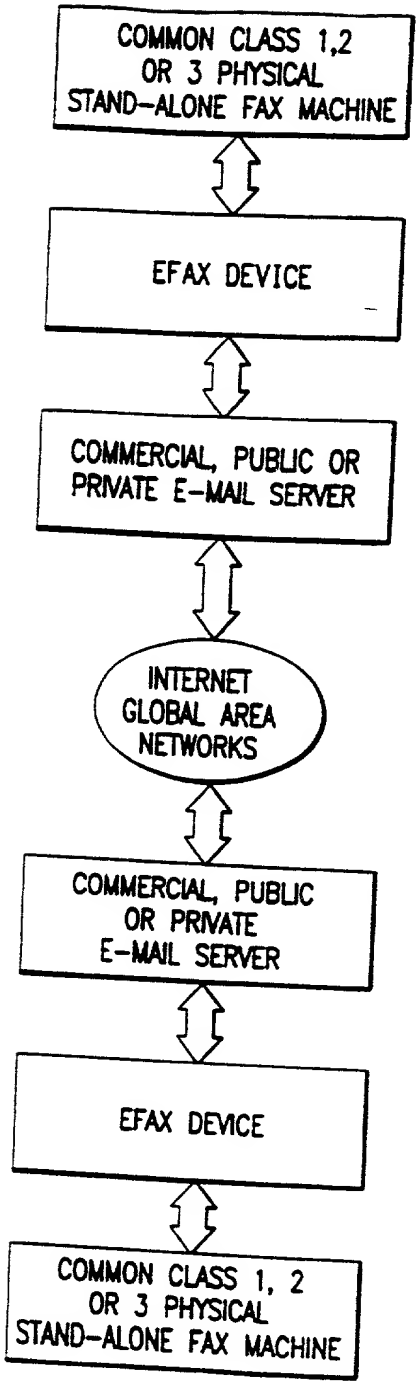

COMMON CLASS 1,2 OR 3 PHYSICAL STAND-ALONE FAX MACHINE
EFAX DEVICE
COMMERCIAL, PUBLIC OR PRIVATE E-MAIL SERVER
INTERNET GLOBAL AREA NETWORKS
COMMERCIAL, PUBLIC OR PRIVATE E-MAIL SERVER
EFAX DEVICE
COMMON CLASS 1, 2 OR 3 PHYSICAL STAND-ALONE FAX MACHINE

FIG. 5

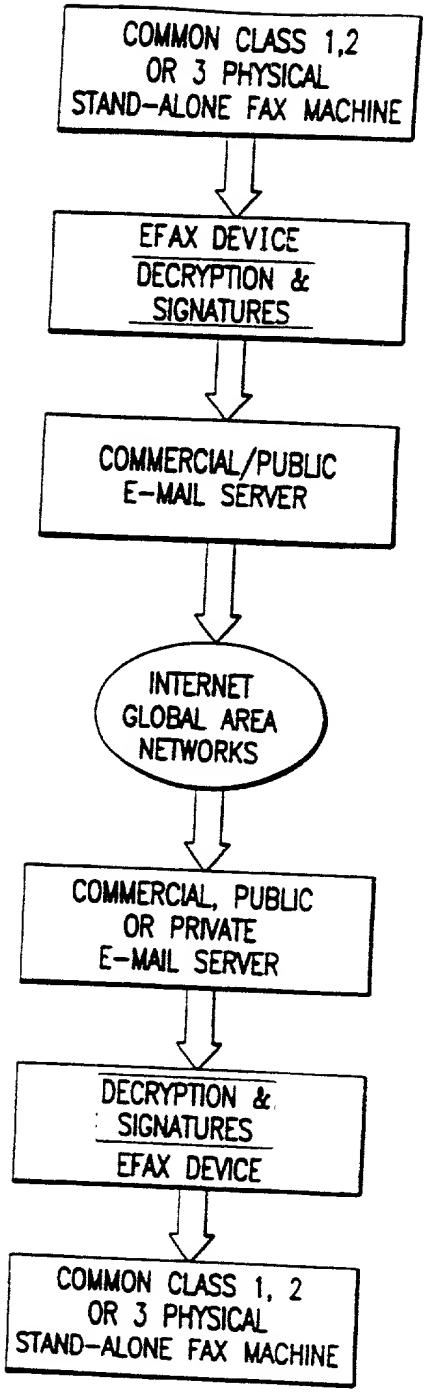

COMMON CLASS 1,2 OR 3 PHYSICAL STAND-ALONE FAX MACHINE
EFAX DEVICE
DECRYPTION & SIGNATURES
COMMERCIAL/PUBLIC E-MAIL SERVER
INTERNET GLOBAL AREA NETWORKS
COMMERCIAL, PUBLIC OR PRIVATE E-MAIL SERVER
DECRYPTION & SIGNATURES
EFAX DEVICE
COMMON CLASS 1, 2 OR 3 PHYSICAL STAND-ALONE FAX MACHINE

FIG. 6

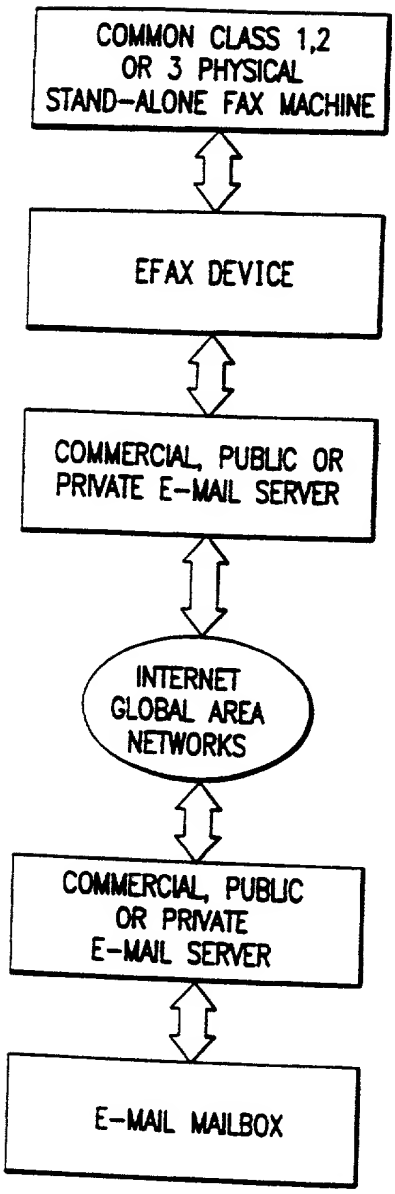

COMMON CLASS 1,2
OR 3 PHYSICAL
STAND-ALONE FAX MACHINE
EFAX DEVICE
COMMERCIAL, PUBLIC OR
PRIVATE E-MAIL SERVER
INTERNET
GLOBAL AREA
NETWORKS
COMMERCIAL, PUBLIC
OR PRIVATE
E-MAIL SERVER
E-MAIL MAILBOX

FIG. 7

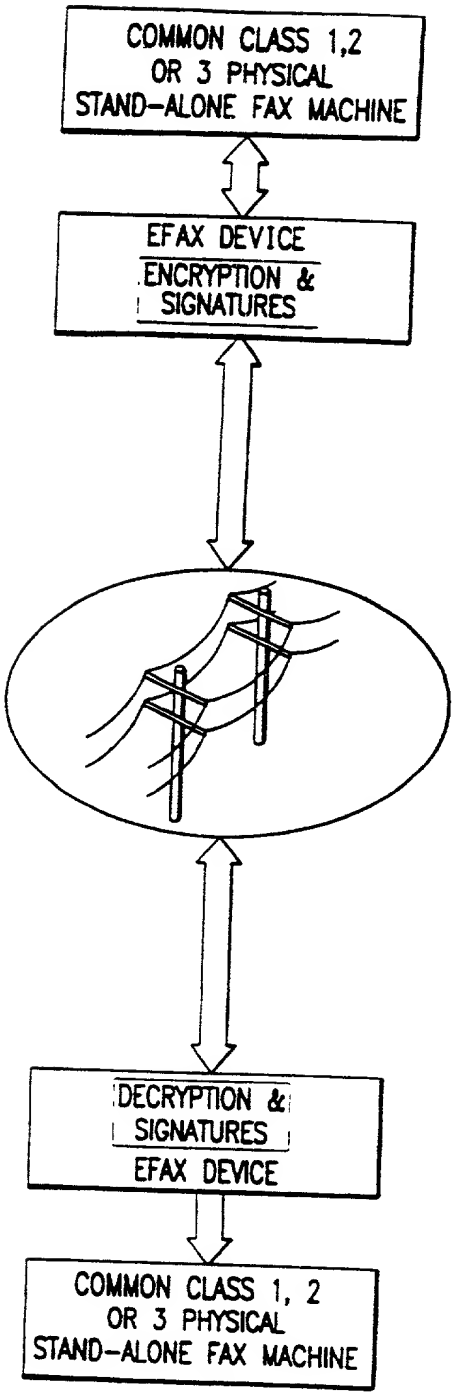

COMMON CLASS 1,2
OR 3 PHYSICAL
STAND-ALONE FAX MACHINE
EFAX DEVICE
ENCRYPTION &
SIGNATURES
DECRYPTION &
SIGNATURES
EFAX DEVICE
COMMON CLASS 1, 2
OR 3 PHYSICAL
STAND-ALONE FAX MACHINE

FIG. 8

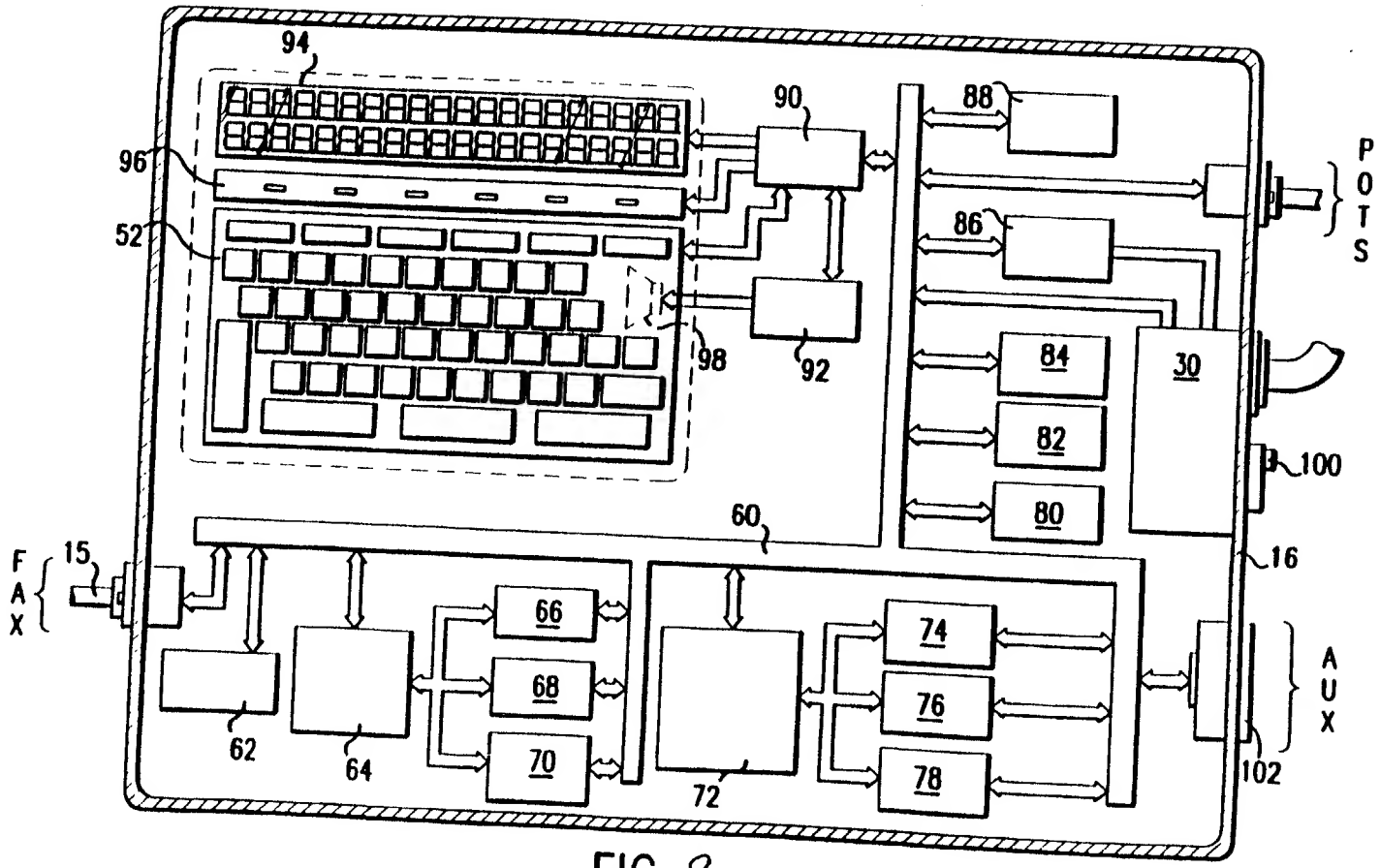

94
90
88
96
52
86
98
92
84
30
82
100
80
60
16
15
66
74
68
76
62
64
70
72
78
102
POTS
AUX
FAX

FIG. 9

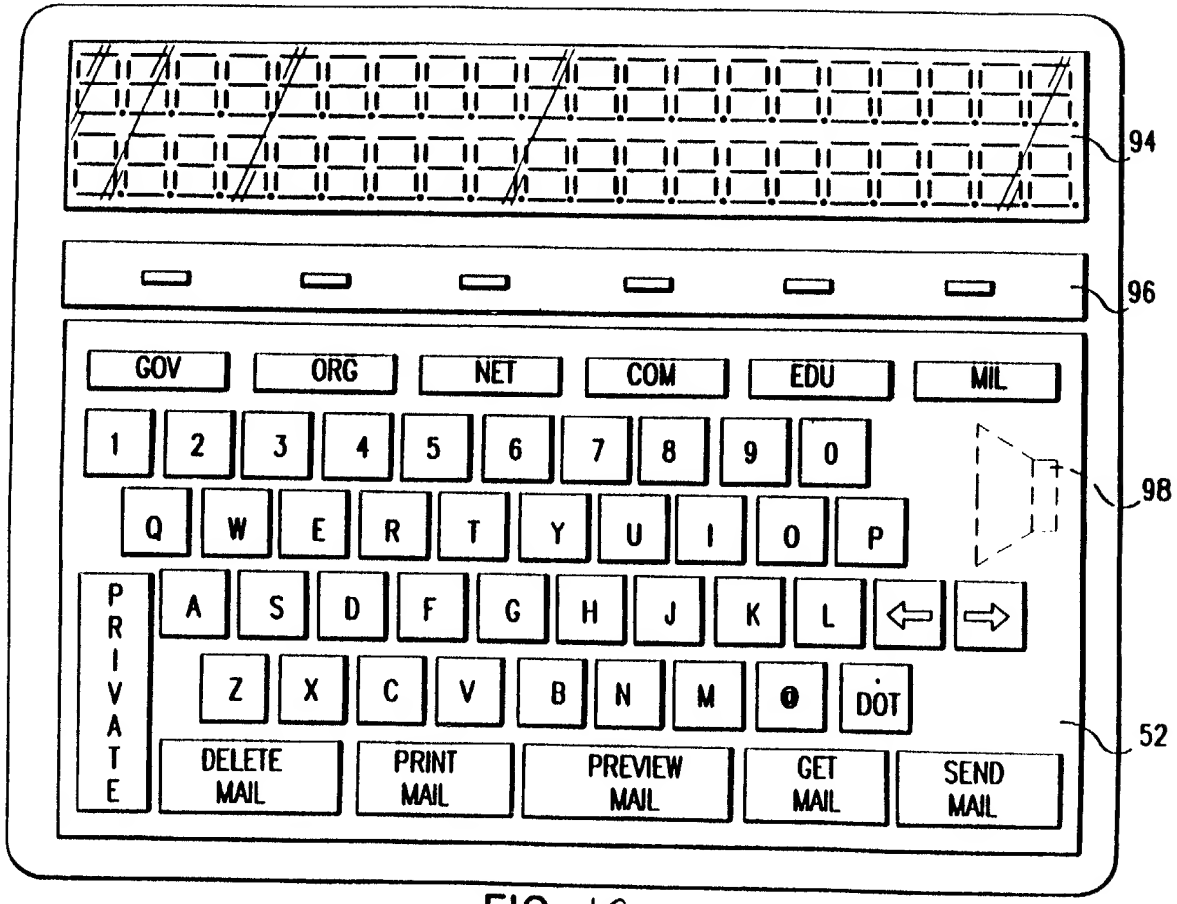

94
96
GOV
ORG
NET
COM
EDU
MIL
1 2 3 4 5 6 7 8 9 0
Q W E R T Y U I O P
98
PRIVATE
A S D F G H J K L
Z X C V B N M @ DOT
52
DELETE MAIL
PRINT MAIL
PREVIEW MAIL
GET MAIL
SEND MAIL

FIG. 10

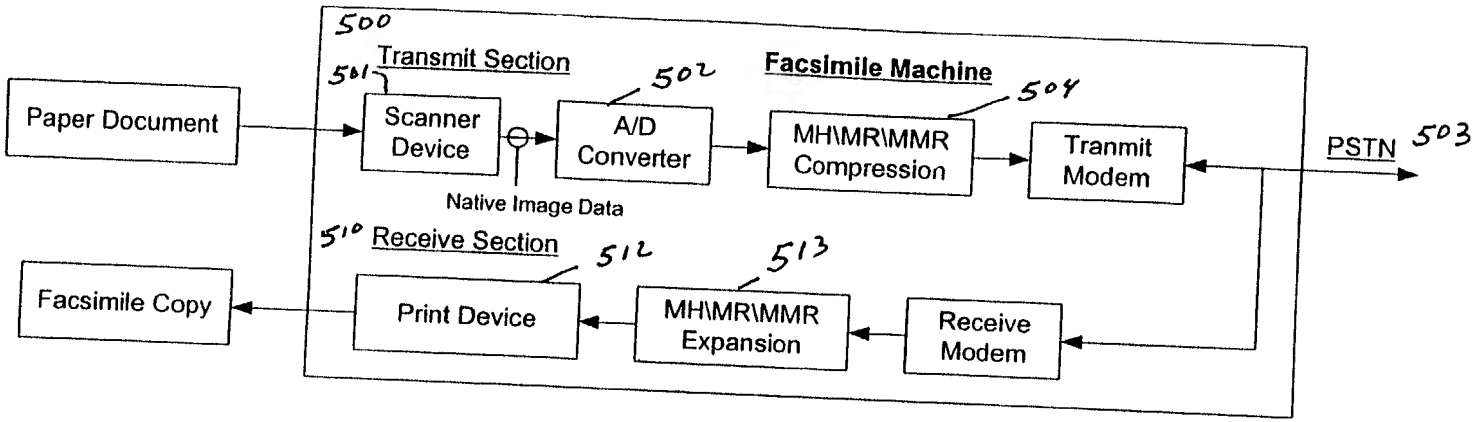

500
Transmit Section
501
Facsimile Machine
502
504
Paper Document
Scanner Device
A/D Converter
MH\MR\MMR Compression
Tranmit Modem
PSTN
503
Native Image Data
510 Receive Section
512
513
Facsimile Copy
Print Device
MH\MR\MMR Expansion
Receive Modem

Figure 11

Figure 12

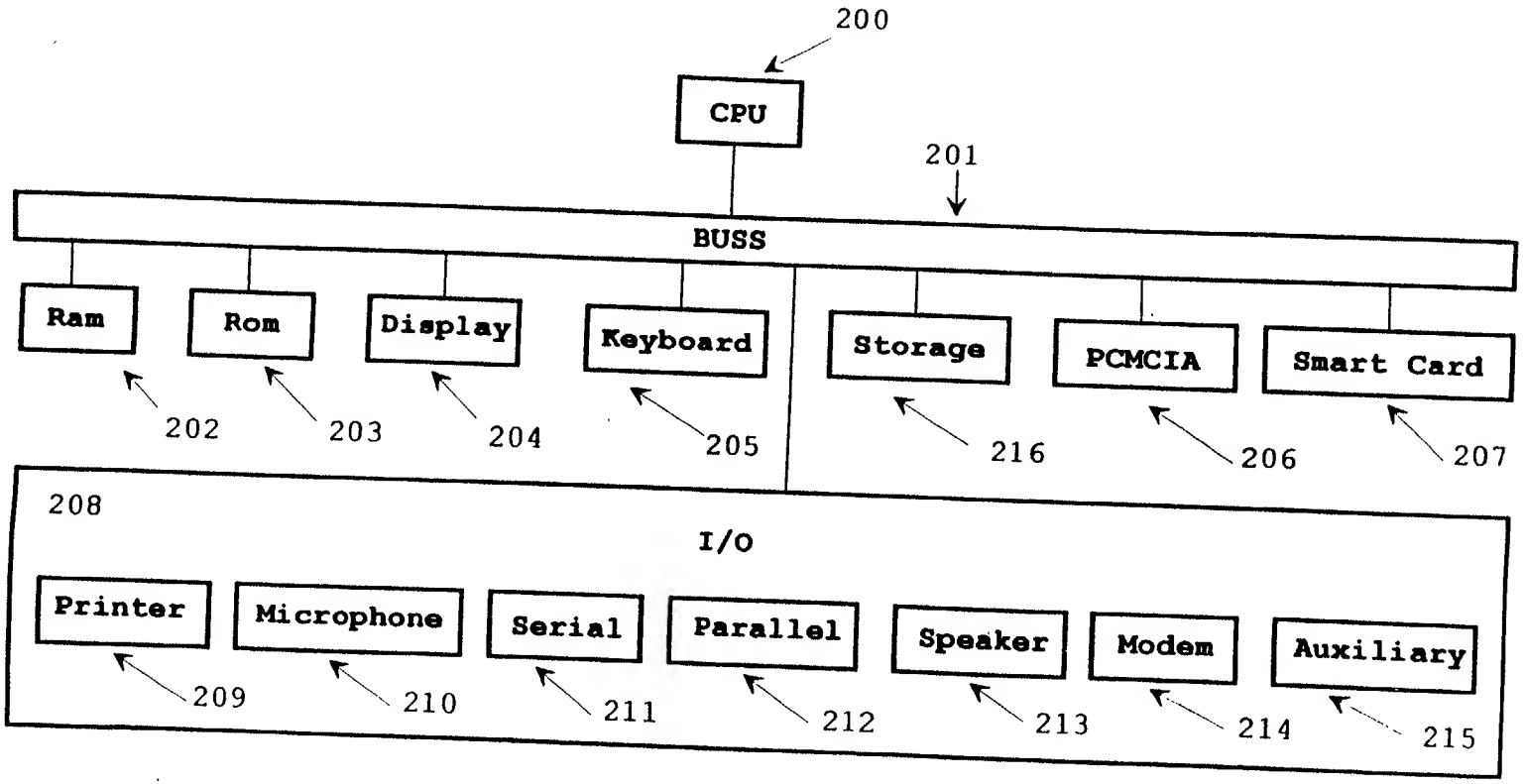


Figure 13

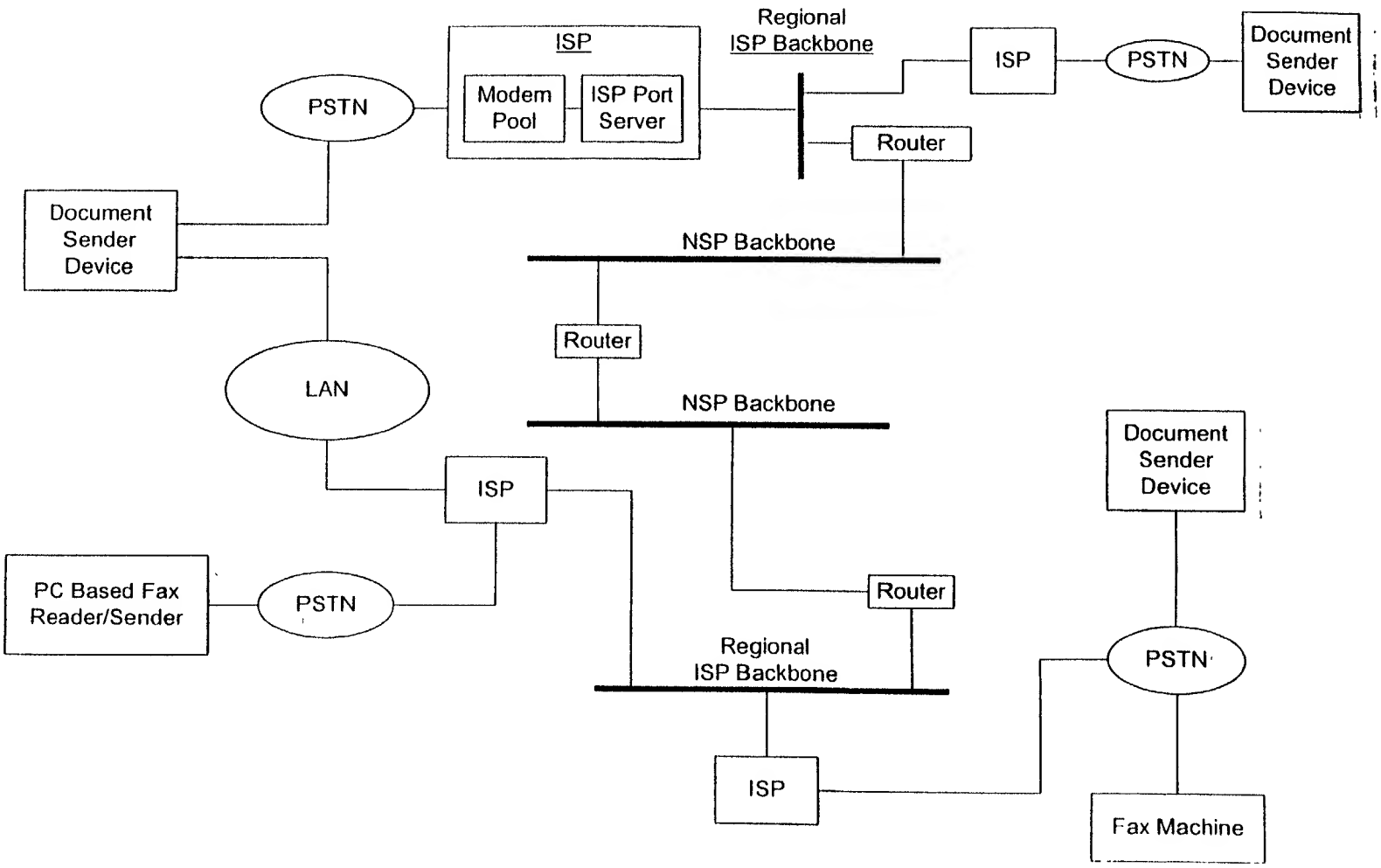

ISP
Regional
ISP Backbone
Modem
Pool
ISP Port
Server
PSTN
ISP
PSTN
Document
Sender
Device
Router
Document
Sender
Device
NSP Backbone
Router
LAN
NSP Backbone
Document
Sender
Device
ISP
PC Based Fax
Reader/Sender
PSTN
Router
Regional
ISP Backbone
PSTN
ISP
Fax Machine

Figure 14

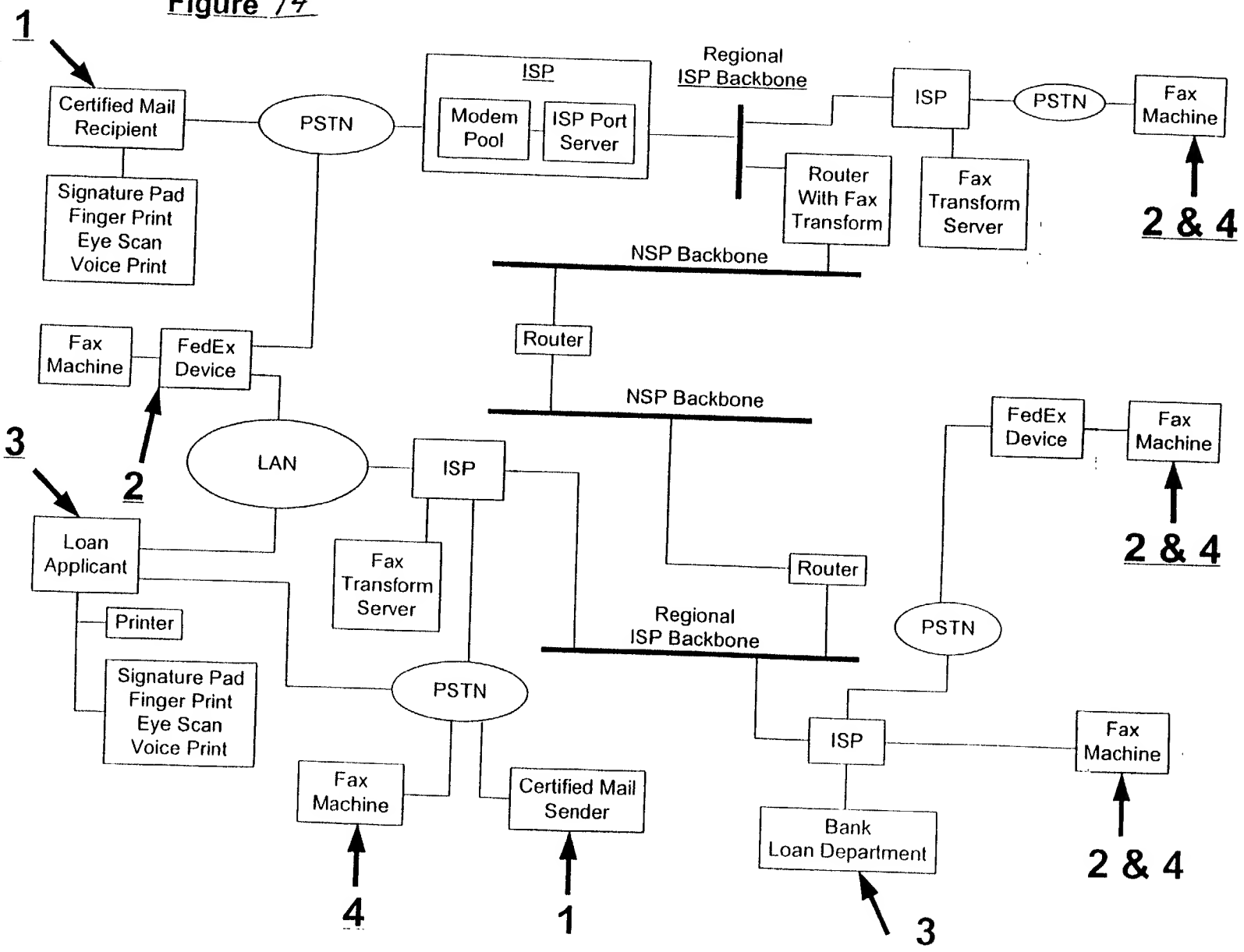
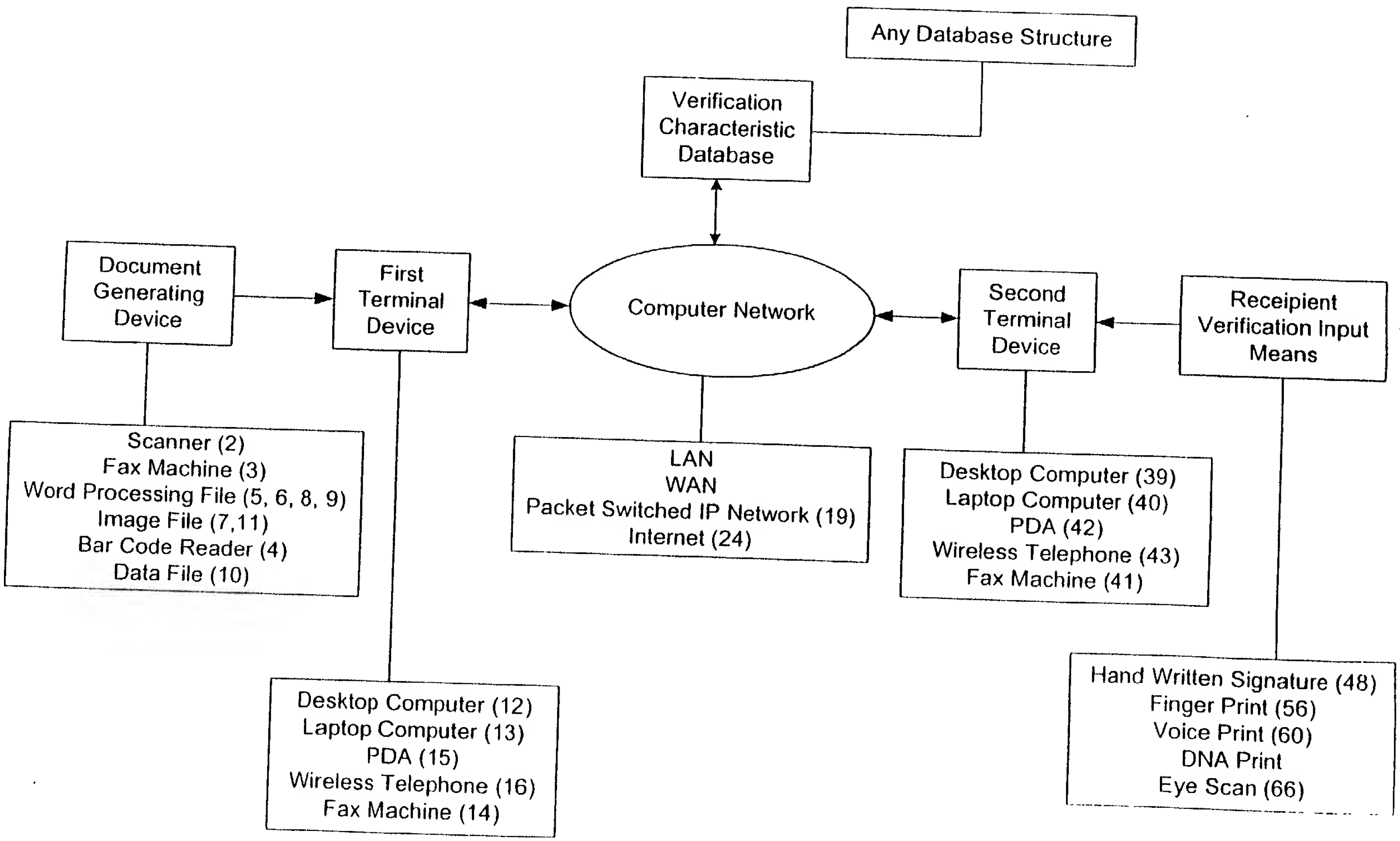
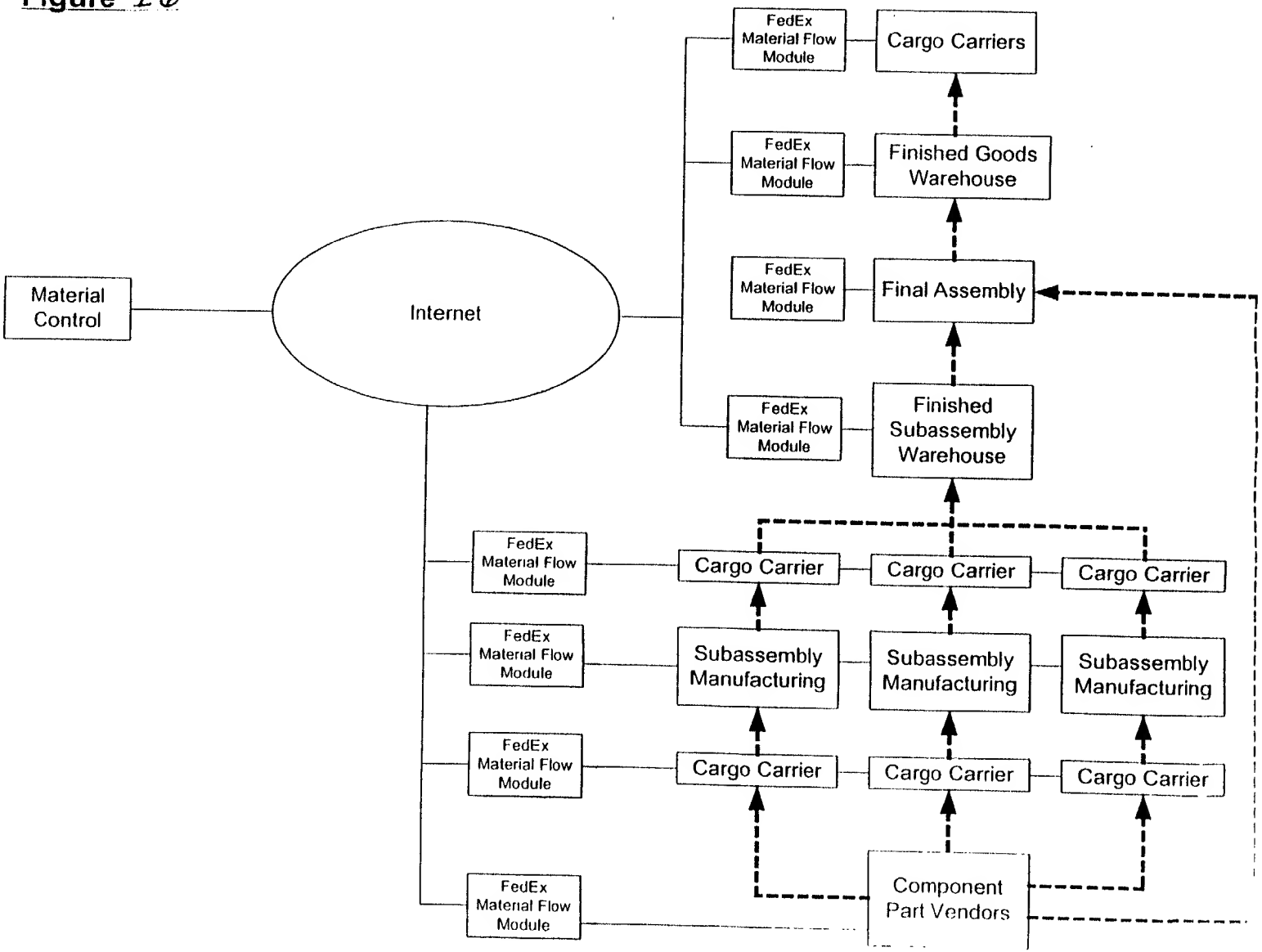


Figure 15



Any Database Structure
Verification Characteristic Database
Document Generating Device
First Terminal Device
Computer Network
Second Terminal Device
Receipient Verification Input Means
Scanner (2)
Fax Machine (3)
Word Processing File (5, 6, 8, 9)
Image File (7,11)
Bar Code Reader (4)
Data File (10)
LAN
WAN
Packet Switched IP Network (19)
Internet (24)
Desktop Computer (39)
Laptop Computer (40)
PDA (42)
Wireless Telephone (43)
Fax Machine (41)
Desktop Computer (12)
Laptop Computer (13)
PDA (15)
Wireless Telephone (16)
Fax Machine (14)
Hand Written Signature (48)
Finger Print (56)
Voice Print (60)
DNA Print
Eye Scan (66)

Figure 16


Material Control
Internet
FedEx Material Flow Module
Cargo Carriers
Finished Goods Warehouse
Final Assembly
Finished Subassembly Warehouse
Cargo Carrier
Subassembly Manufacturing
Component Part Vendors

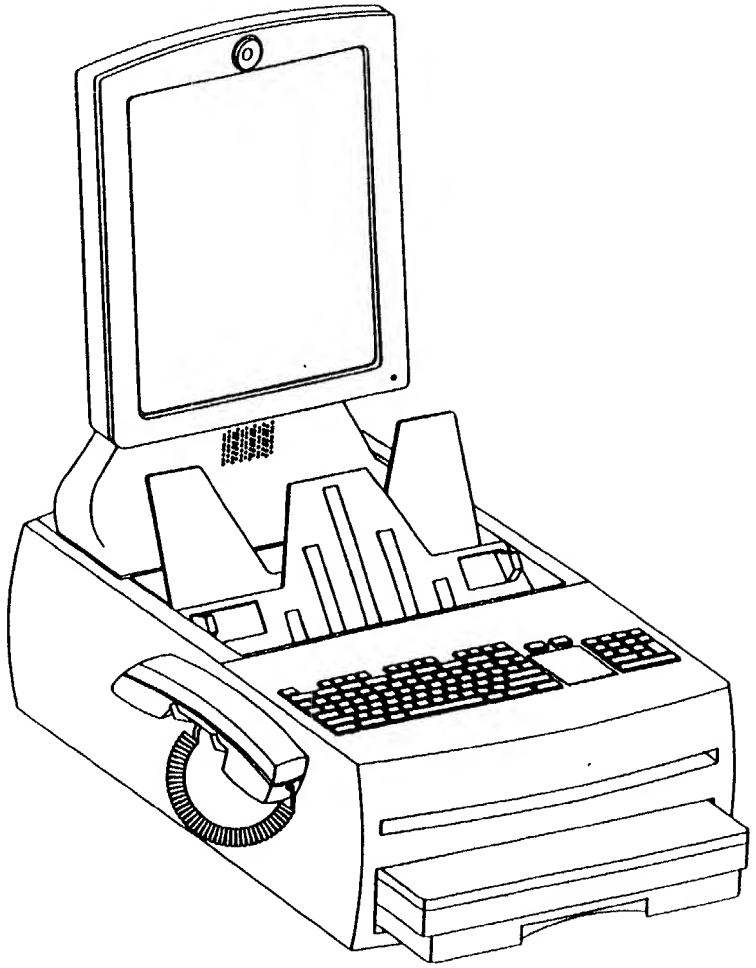


Figure 17

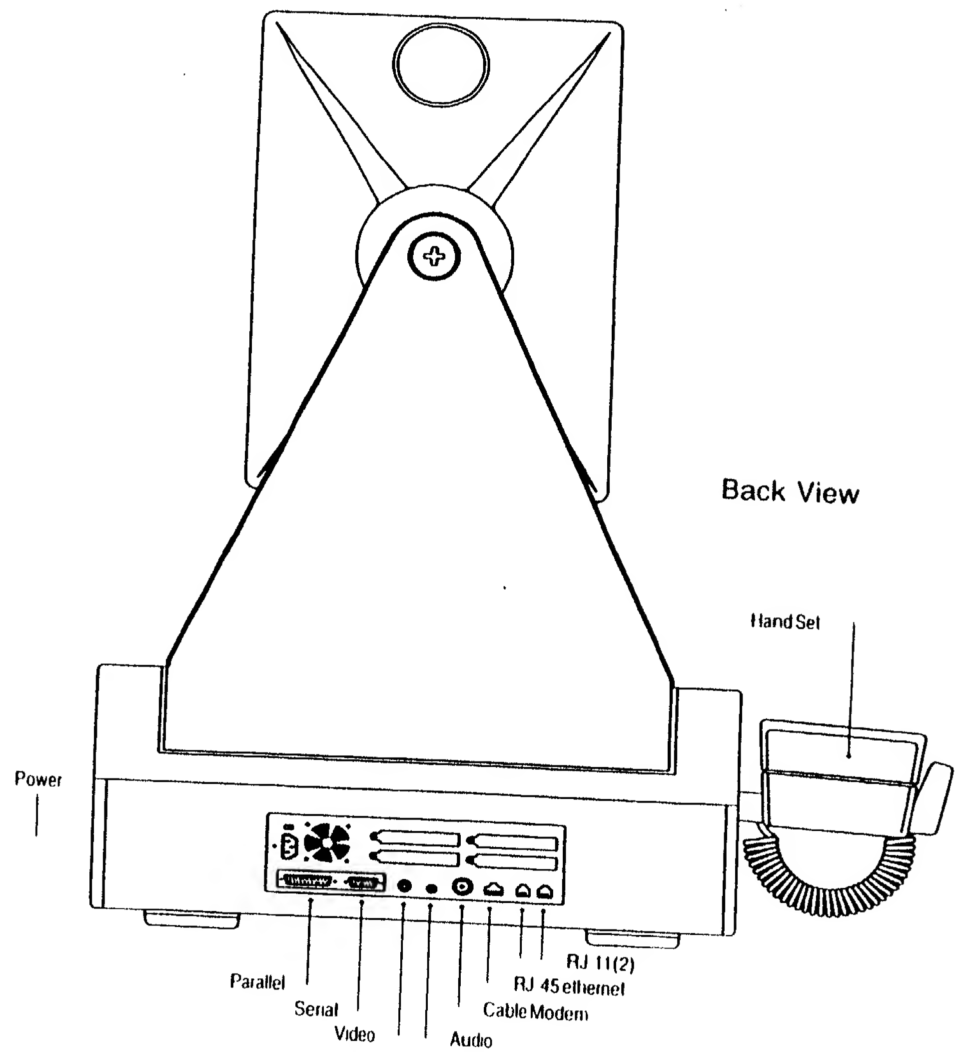

Back View
Hand Set
Power
Parallel
Serial
Video
Audio
Cable Modem
RJ 45 ethernet
RJ 11(2)

Figure 18

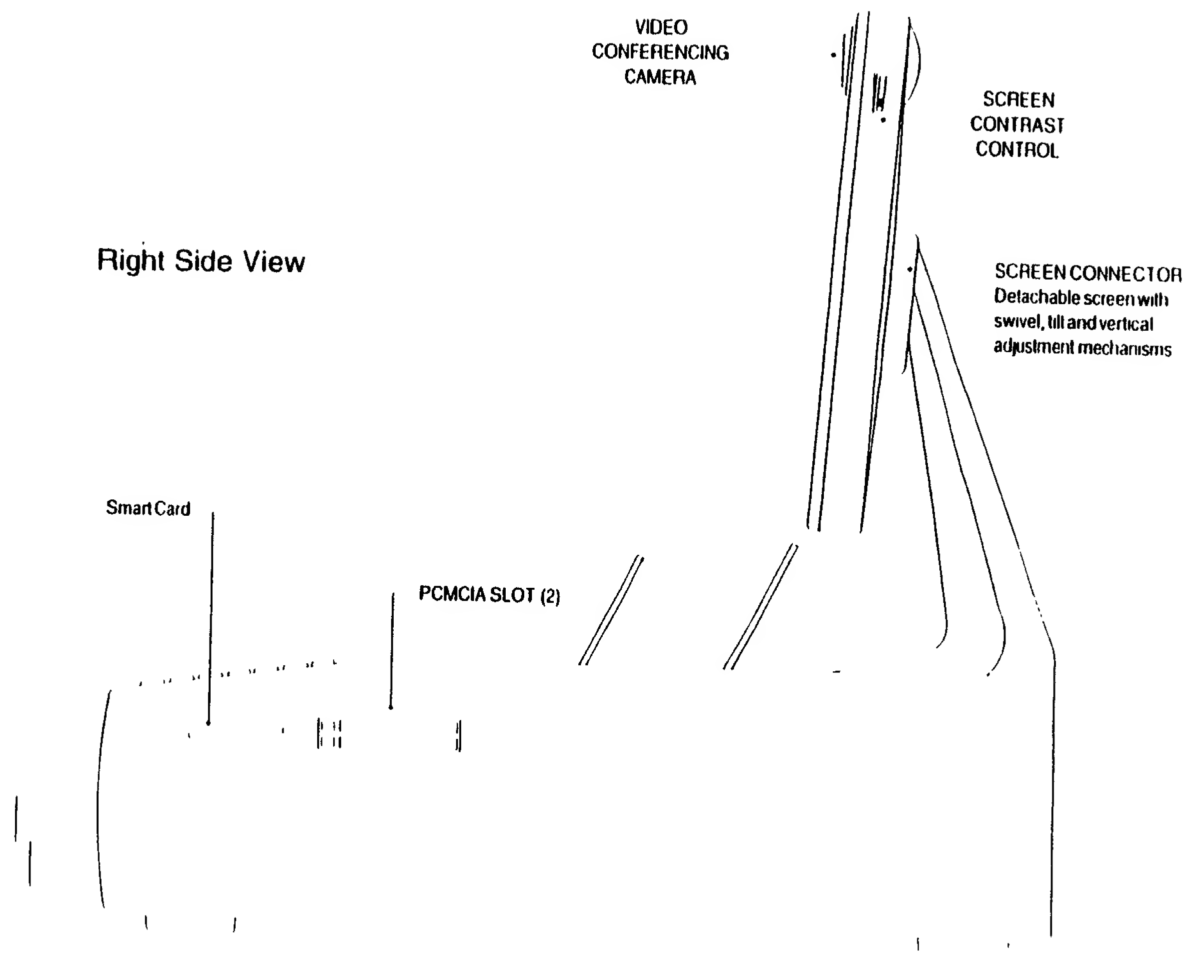

Right Side View
VIDEO
CONFERENCING
CAMERA
SCREEN
CONTRAST
CONTROL
SCREEN CONNECTOR
Detachable screen with
swivel, tilt and vertical
adjustment mechanisms
Smart Card
PCMCIA SLOT (2)

Figure 19

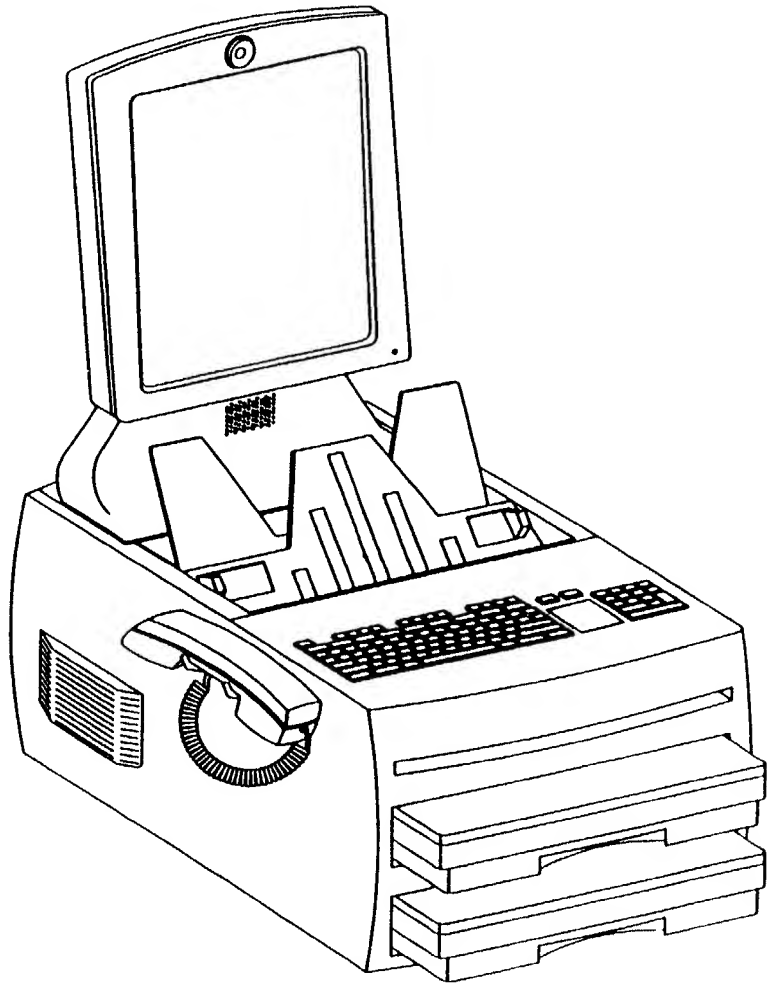


Figure 20

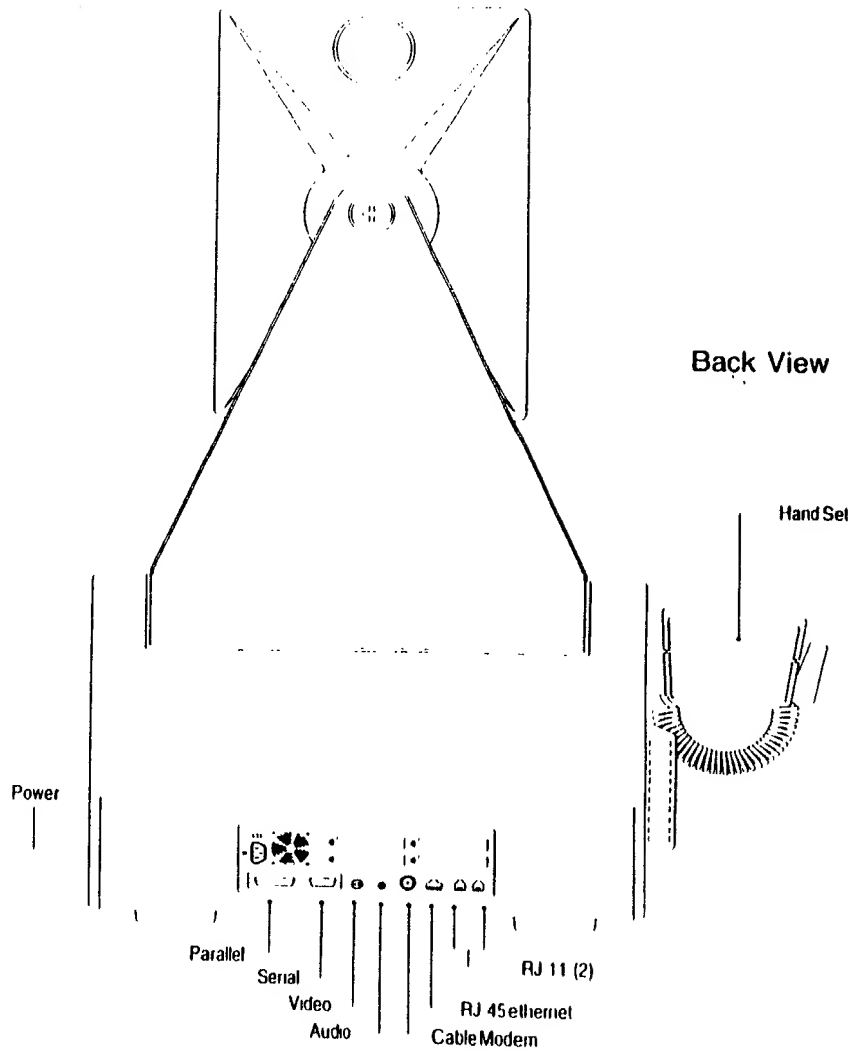


Figure 21

e-Concierge'.MFD
Hardware Ports

Right Side View

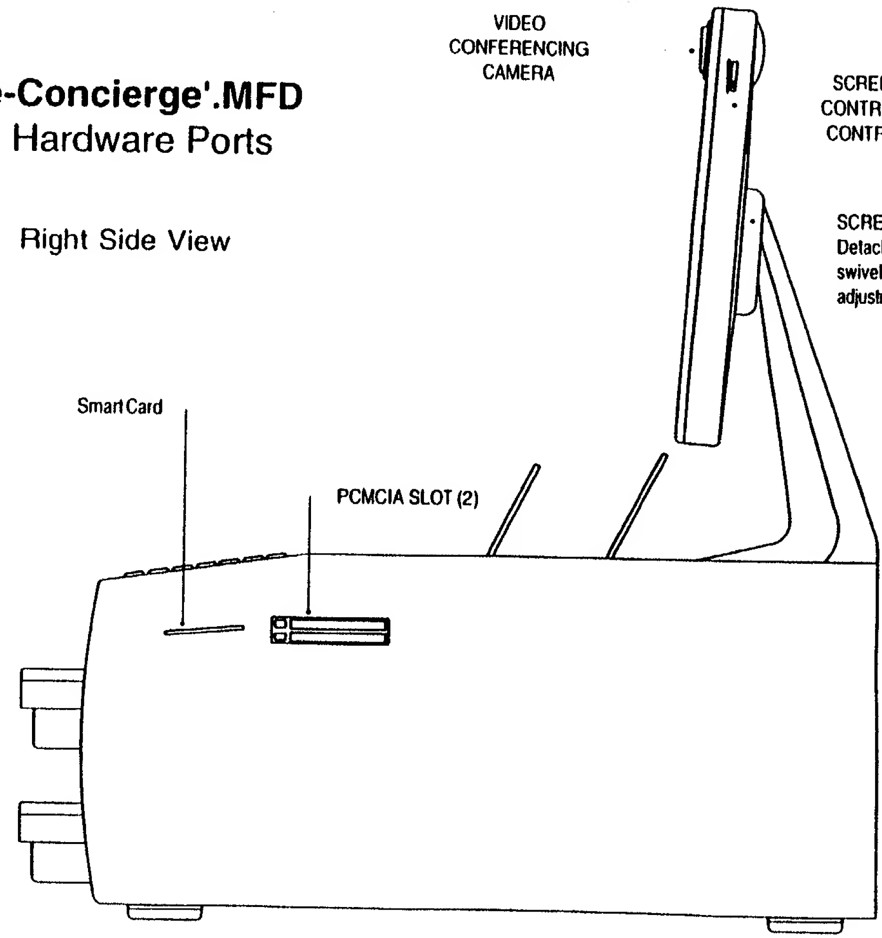


Figure 22

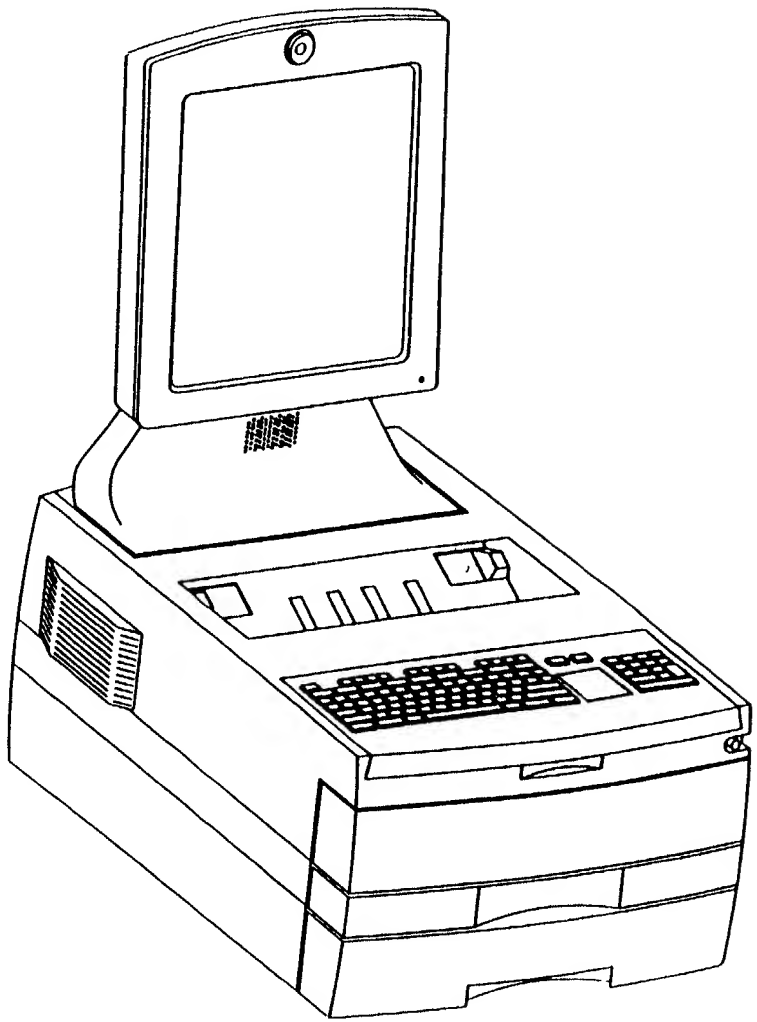


Figure 23

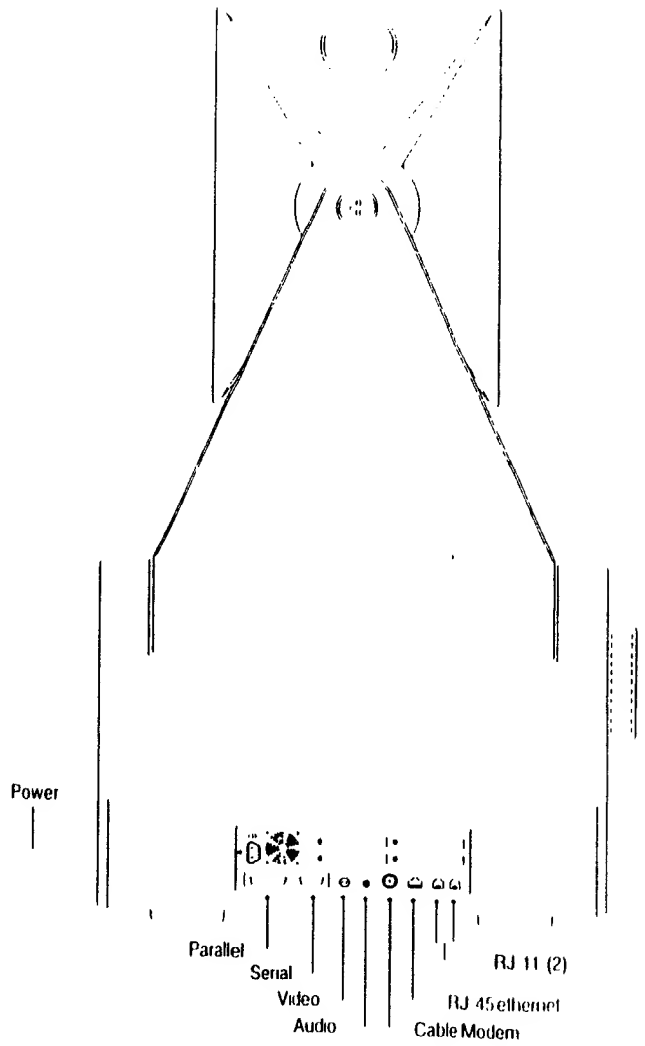

Back View
Power
Parallel
Serial
Video
Audio
RJ 11 (2)
RJ 45 ethernet
Cable Modem

Figure 24

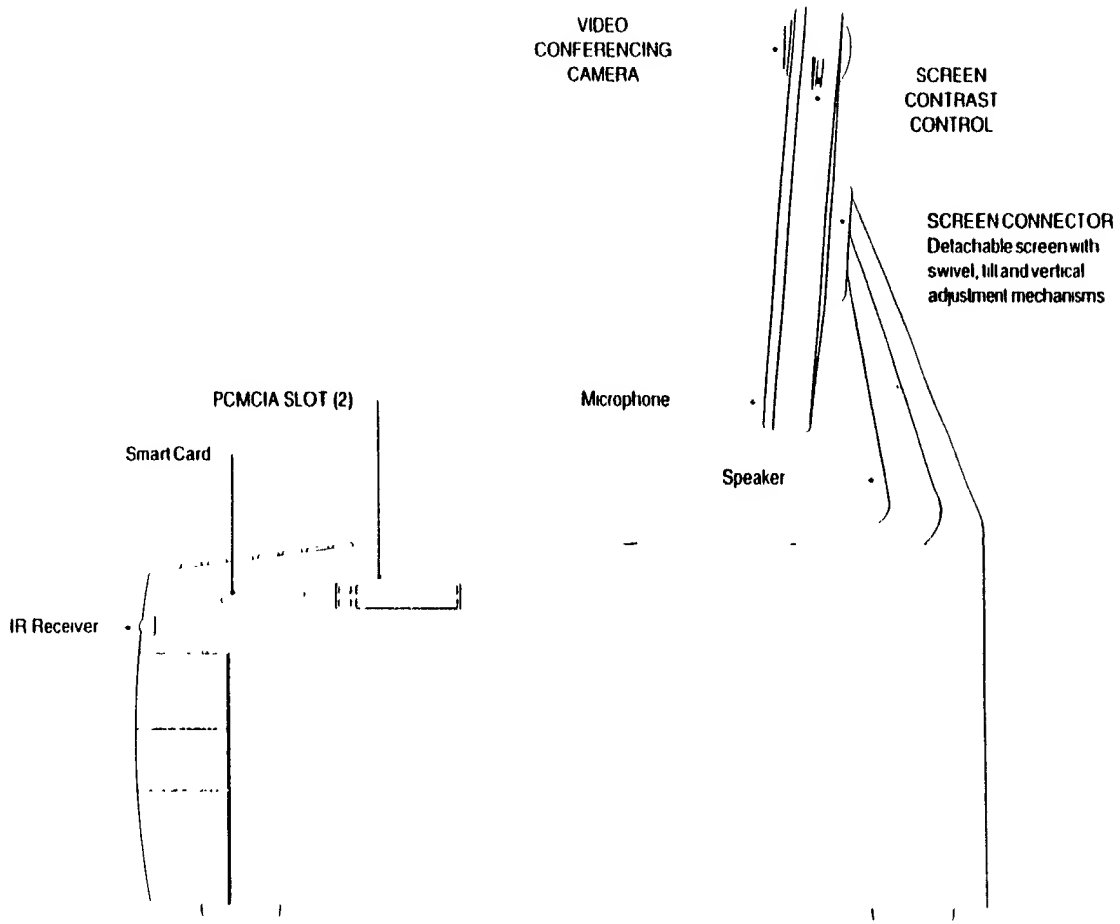


Figure 25

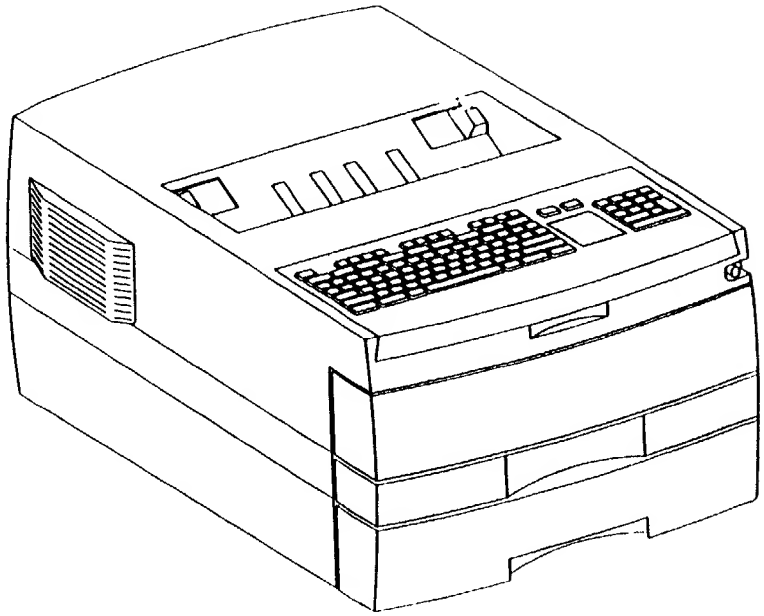


Figure 26

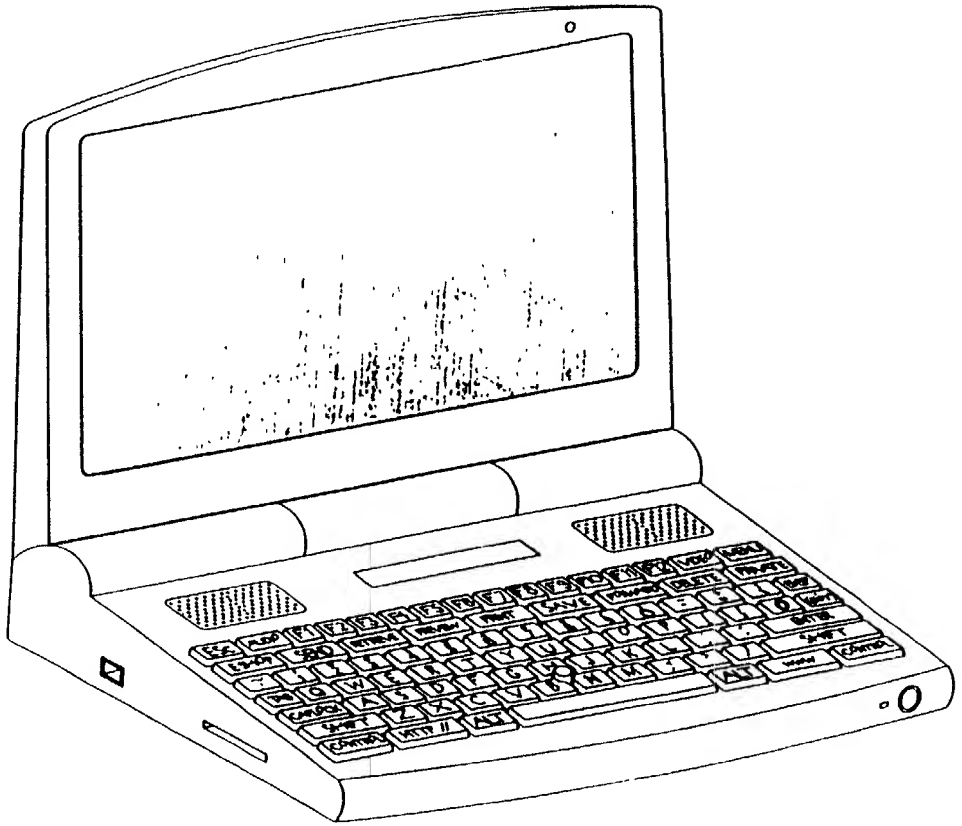


Figure 27

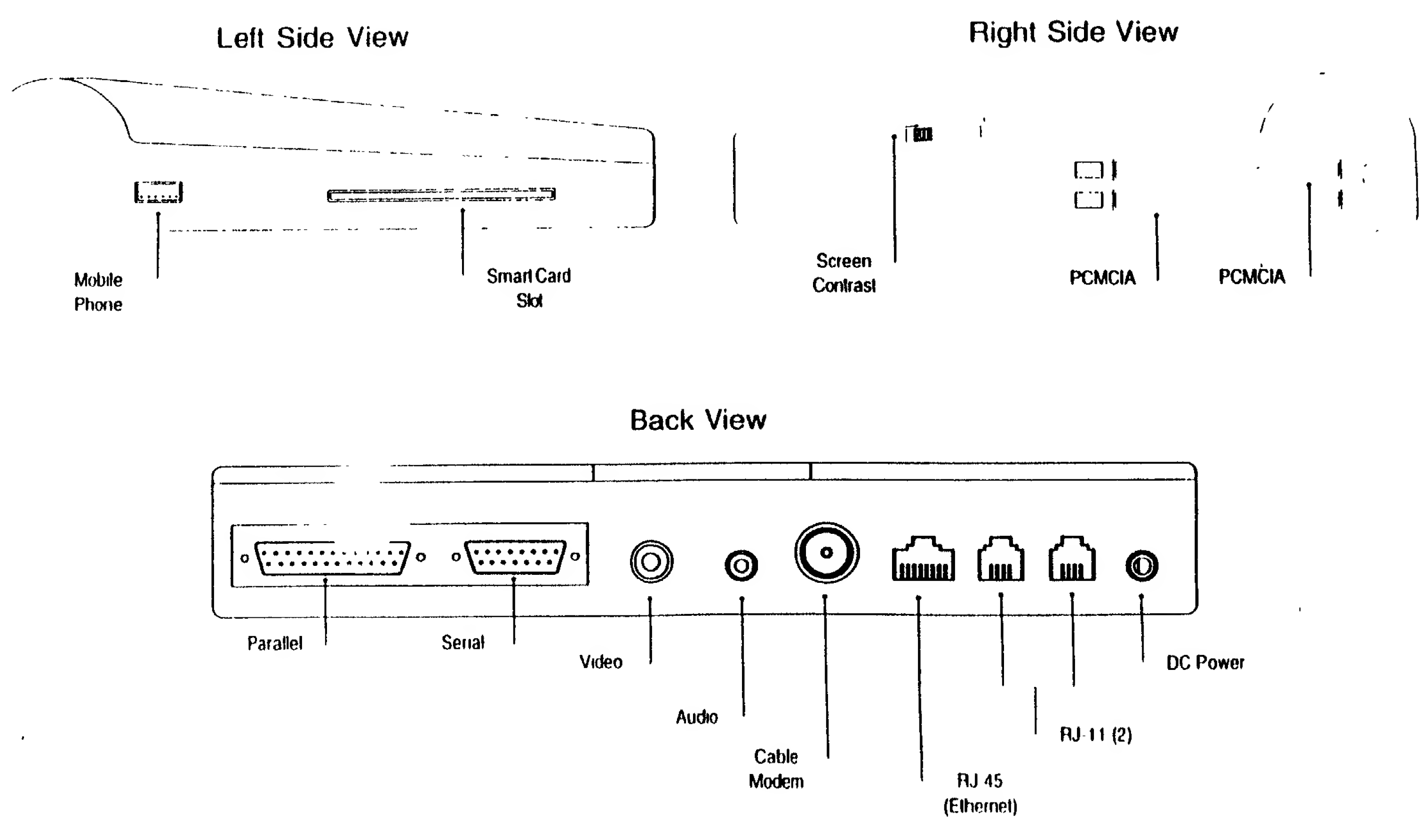

Left Side View
Mobile Phone
Smart Card Slot
Right Side View
Screen Contrast
PCMCIA
PCMCIA
Back View
Parallel
Serial
Video
Audio
Cable Modem
RJ 45 (Ethernet)
RJ-11 (2)
DC Power

Figure 28

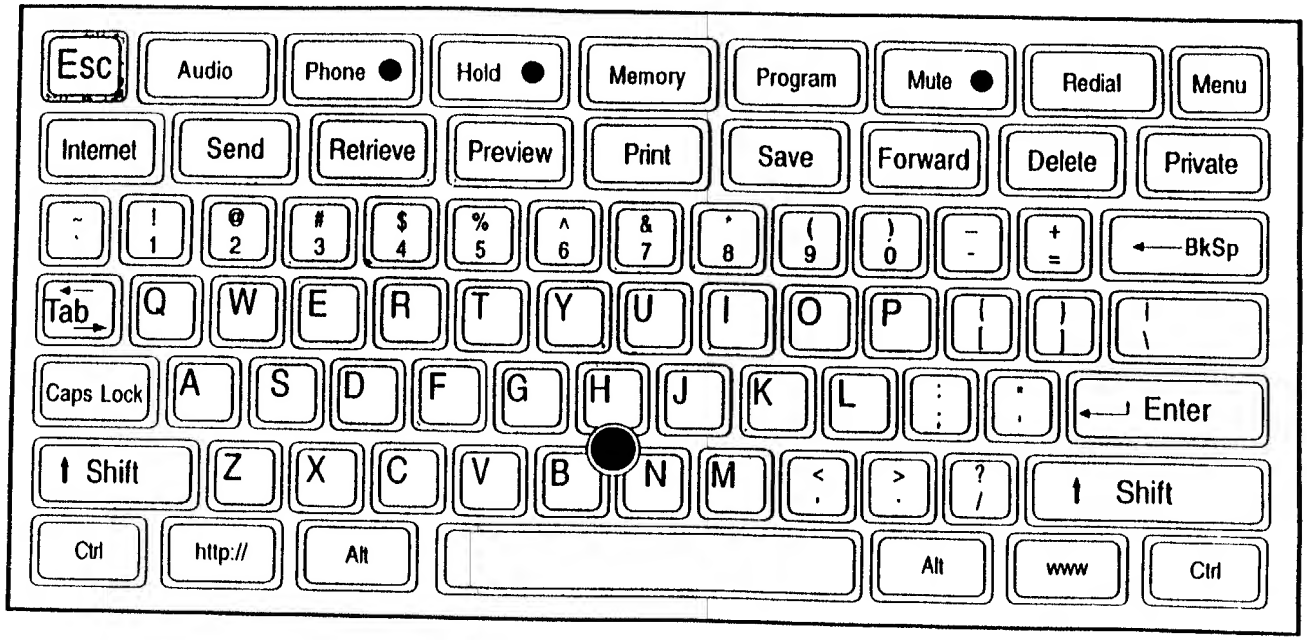


Figure 29

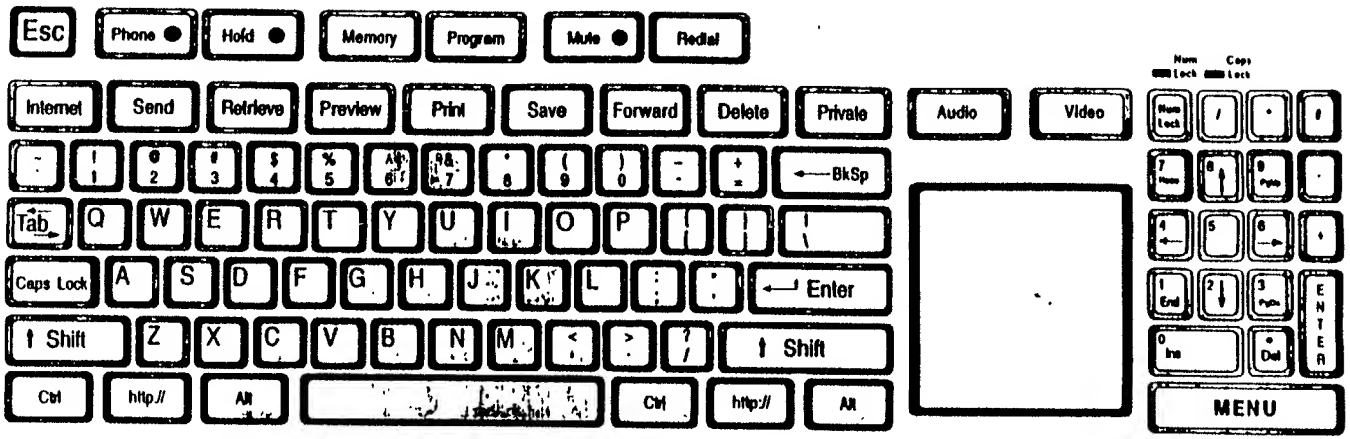

Esc
Phone
Hold
Memory
Program
Mute
Redial
Internet
Send
Retrieve
Preview
Print
Save
Forward
Delete
Private
Audio
Video
BkSp
Tab
Caps Lock
Enter
Shift
Shift
Ctrl
http://
Alt
Ctrl
http://
Alt
MENU

Figure 30

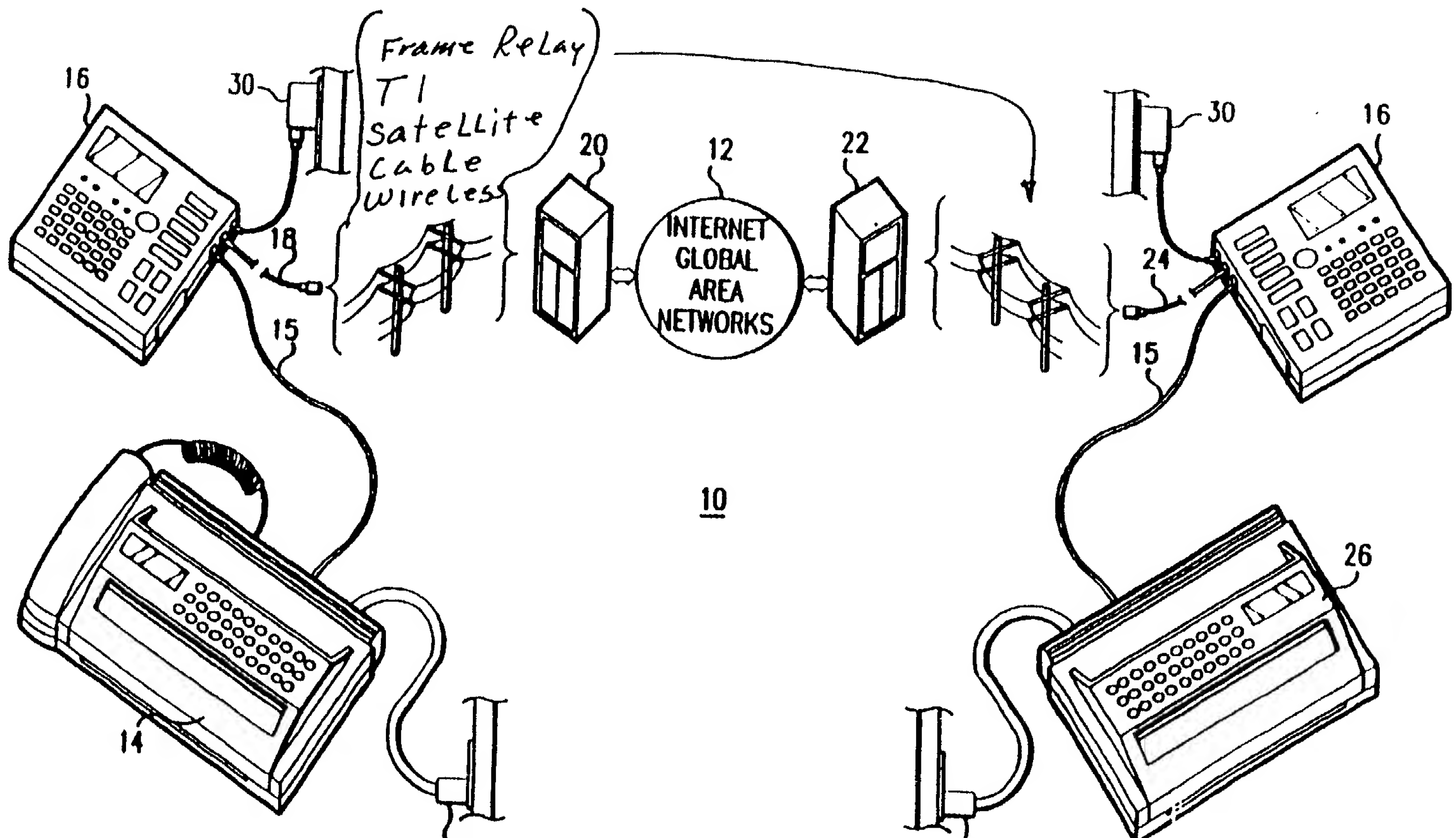

16
30
Frame Relay
T1
Satellite
Cable
Wireless
18
15
14
28
20
12
INTERNET
GLOBAL
AREA
NETWORKS
22
10
30
16
24
15
26
28

Figure 31

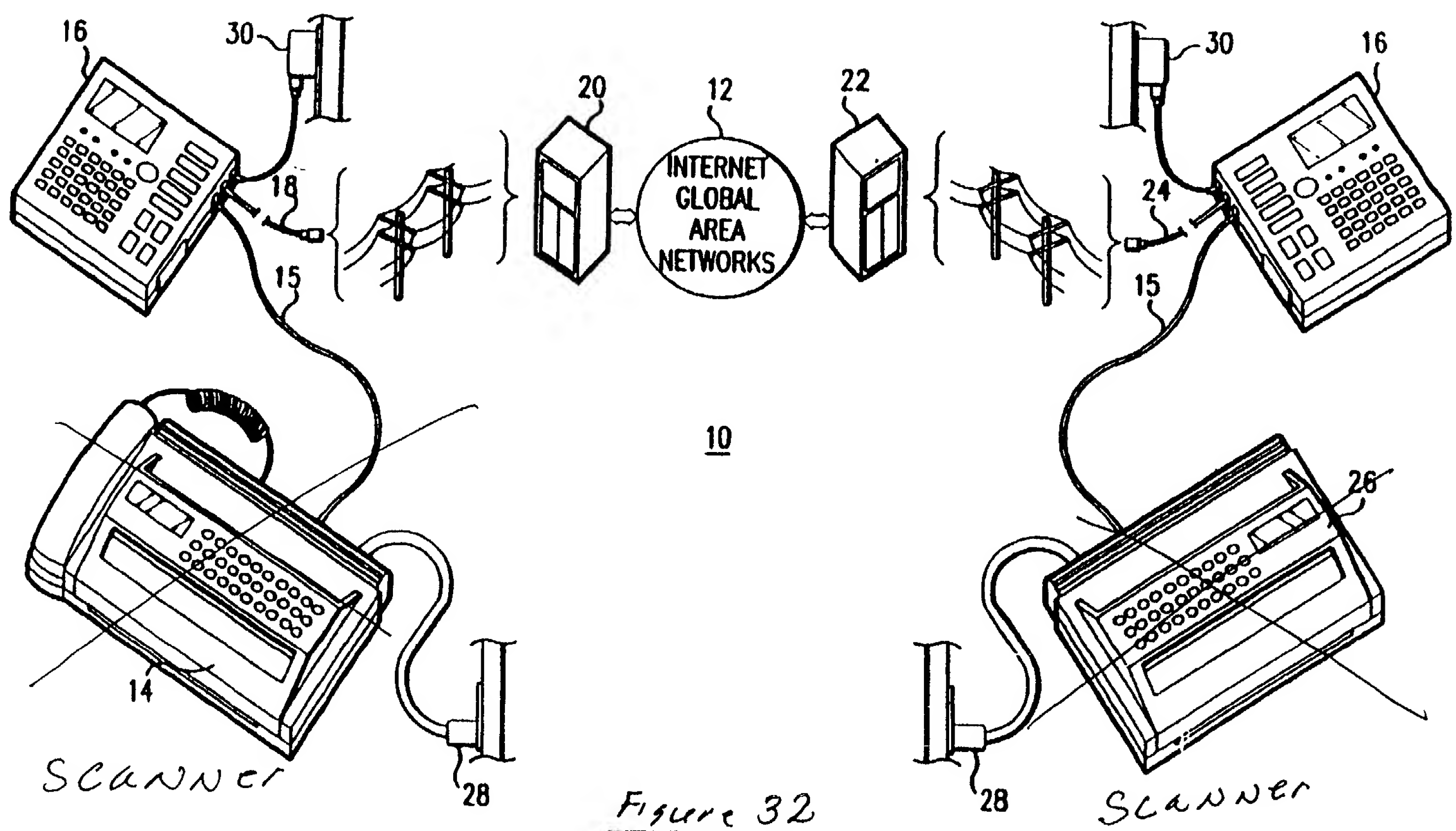

16
30
18
15
20
12
INTERNET
GLOBAL
AREA
NETWORKS
22
24
15
30
16
10
26
14
28
28
Scanner
Scanner

Figure 32

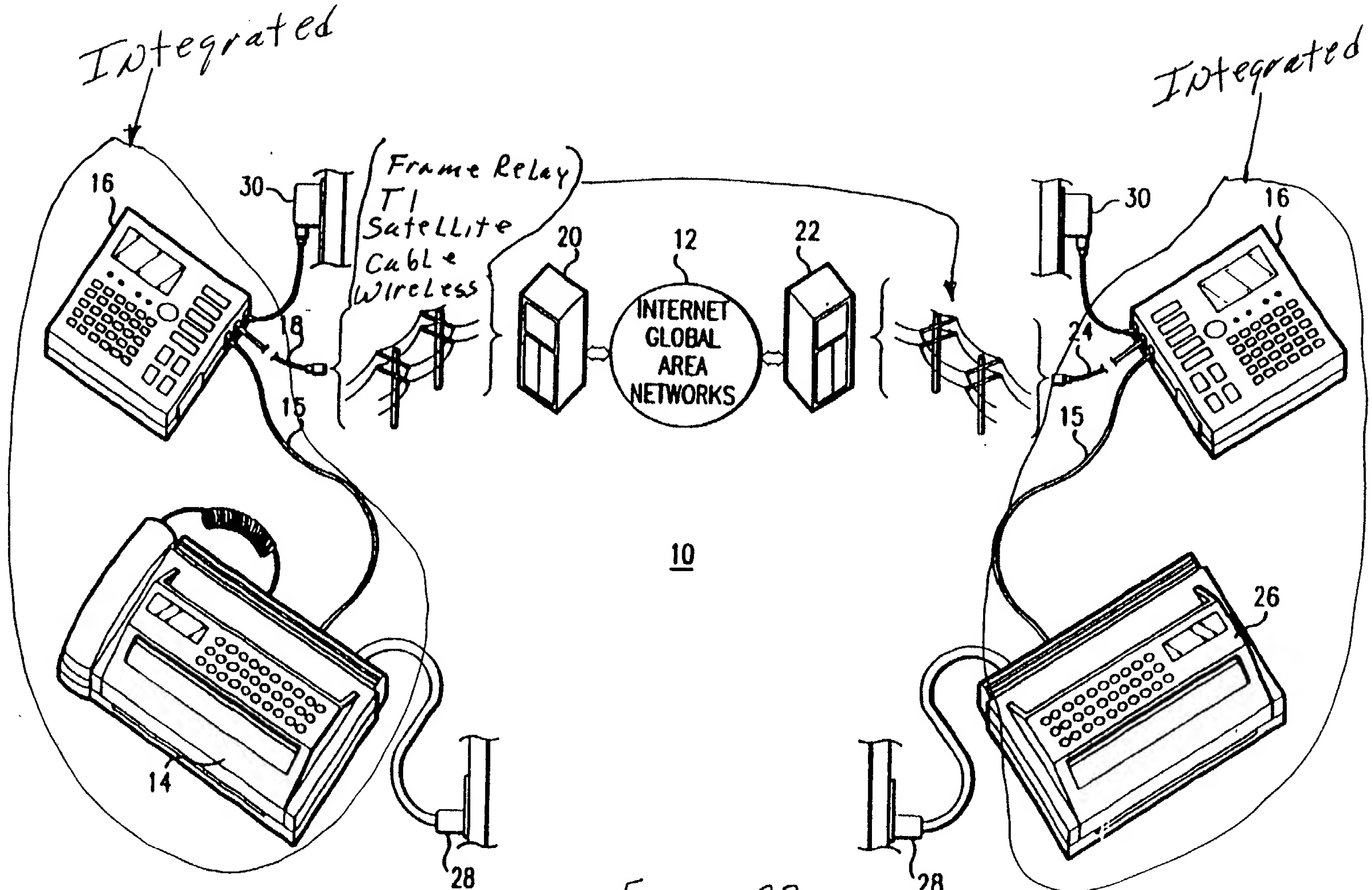
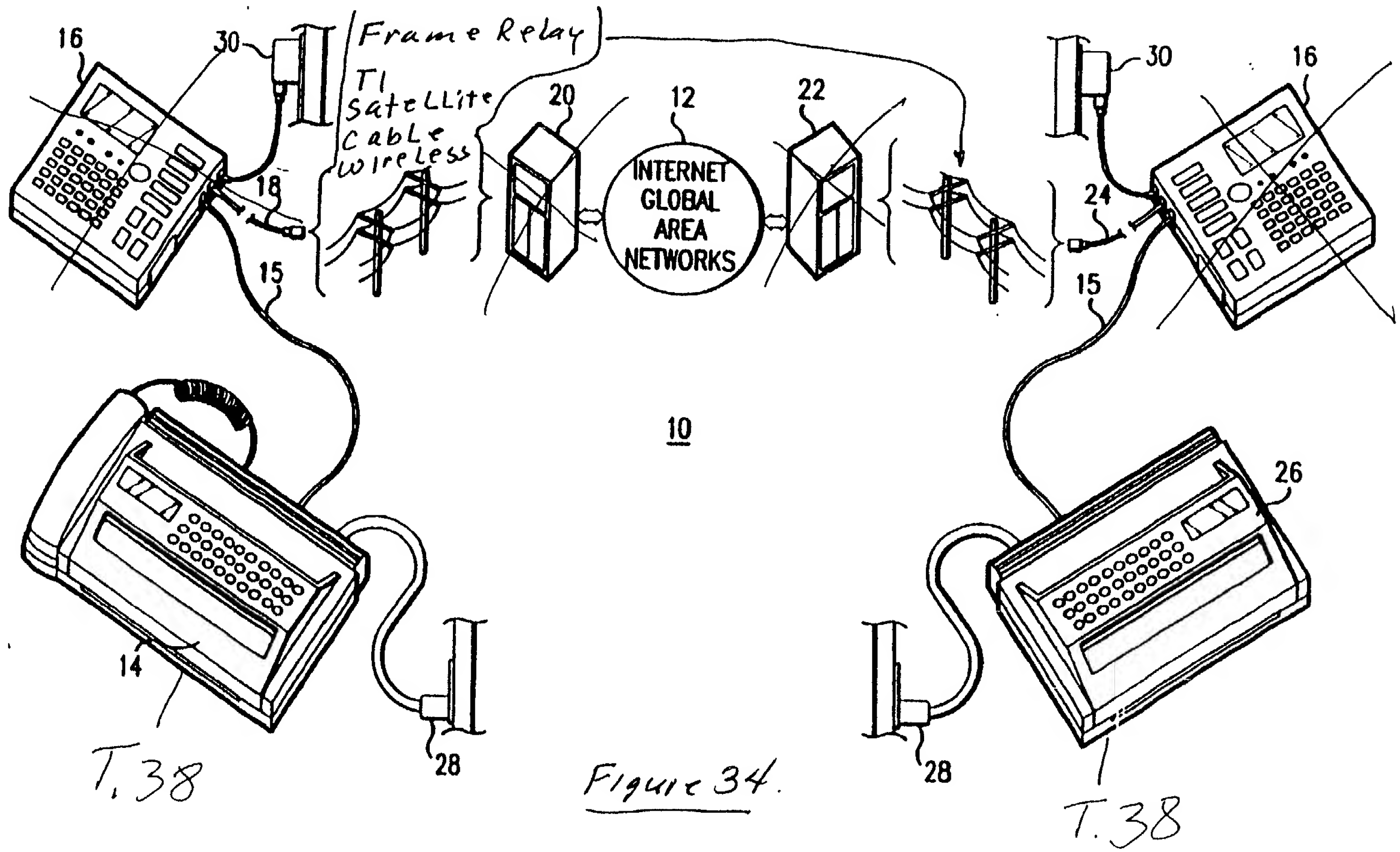


Figure 33



16
30
Frame Relay
T1
Satellite
Cable
wireless
20
12
INTERNET
GLOBAL
AREA
NETWORKS
22
30
16
18
24
15
15
10
26
14
28
28
T.38
T.38

Figure 34.

Figure 35

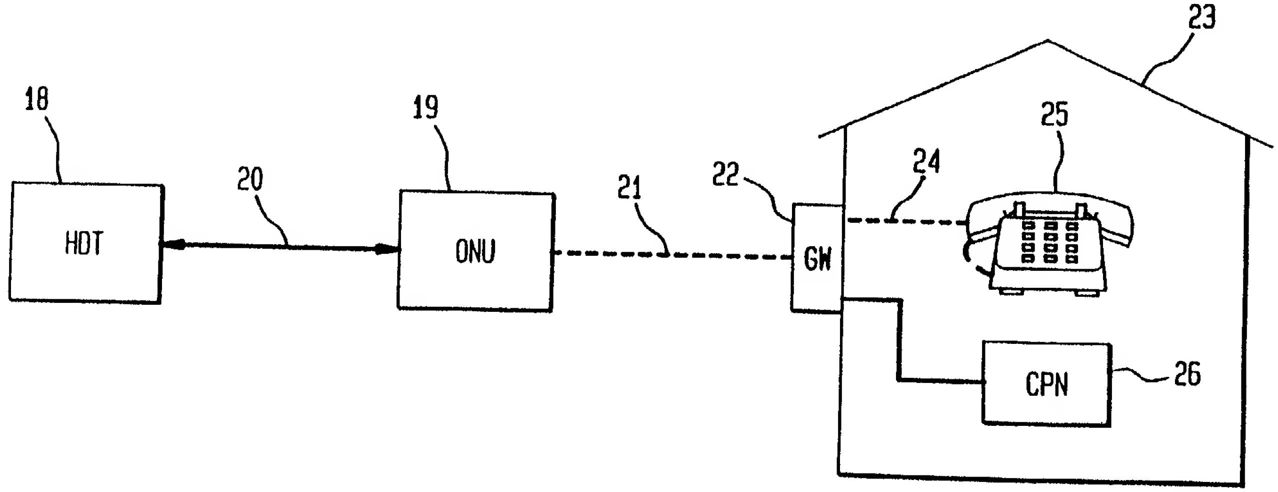


Figure 36

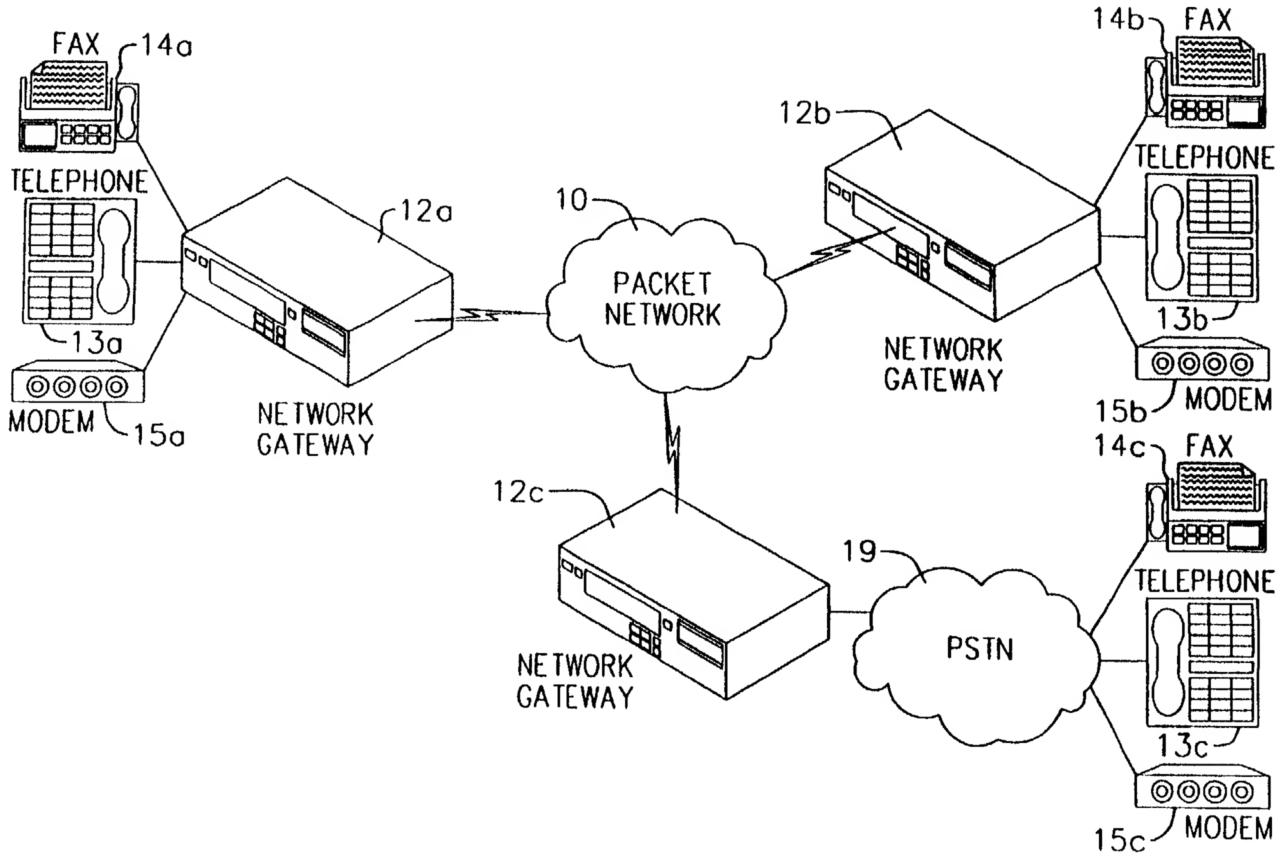


Figure 37

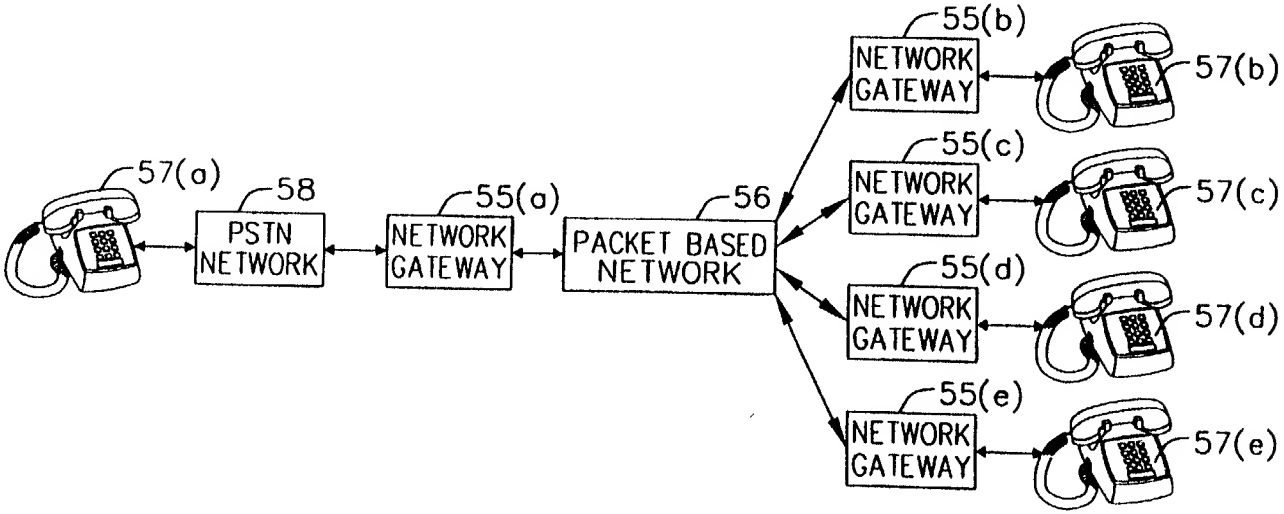


Figure 38

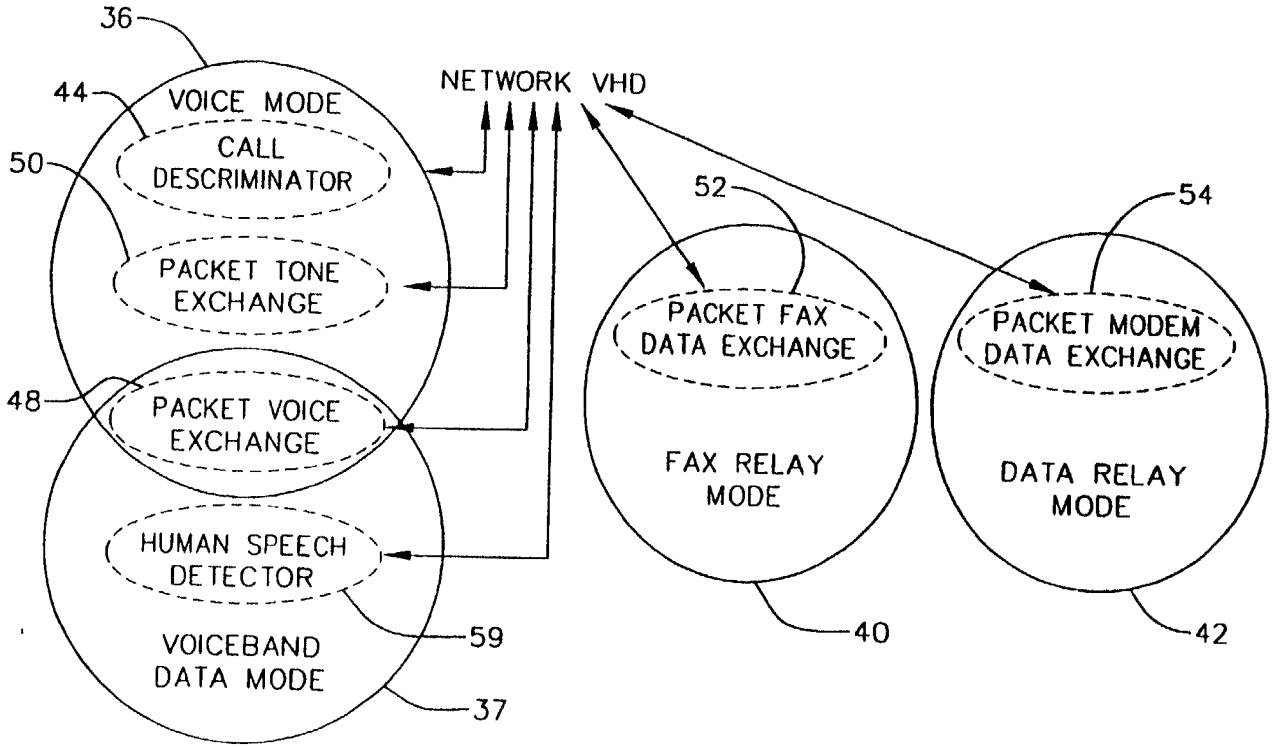


Figure 39

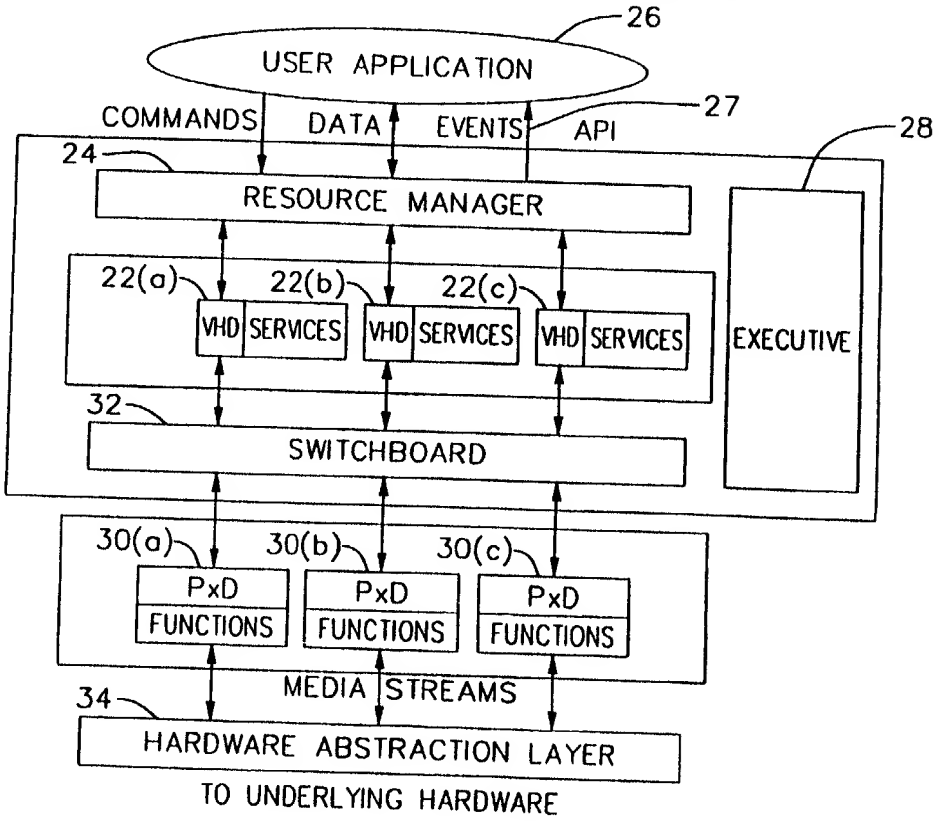

26
USER APPLICATION
COMMANDS
DATA
EVENTS
API
27
28
24
RESOURCE MANAGER
22(a)
22(b)
22(c)
VHD
SERVICES
VHD
SERVICES
VHD
SERVICES
EXECUTIVE
32
SWITCHBOARD
30(a)
30(b)
30(c)
PxD
FUNCTIONS
PxD
FUNCTIONS
PxD
FUNCTIONS
MEDIA STREAMS
34
HARDWARE ABSTRACTION LAYER
TO UNDERLYING HARDWARE

Figure 40

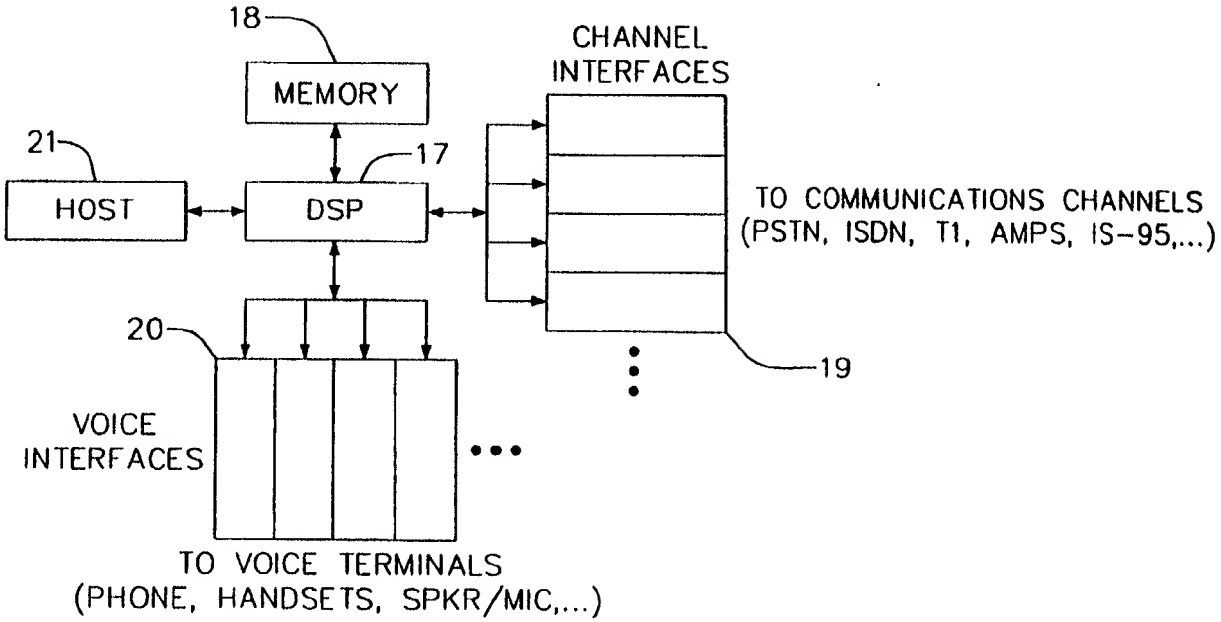

18
MEMORY
21
HOST
17
DSP
CHANNEL
INTERFACES
TO COMMUNICATIONS CHANNELS
(PSTN, ISDN, T1, AMPS, IS-95,...)
19
20
VOICE
INTERFACES
TO VOICE TERMINALS
(PHONE, HANDSETS, SPKR/MIC,...)

Figure 41

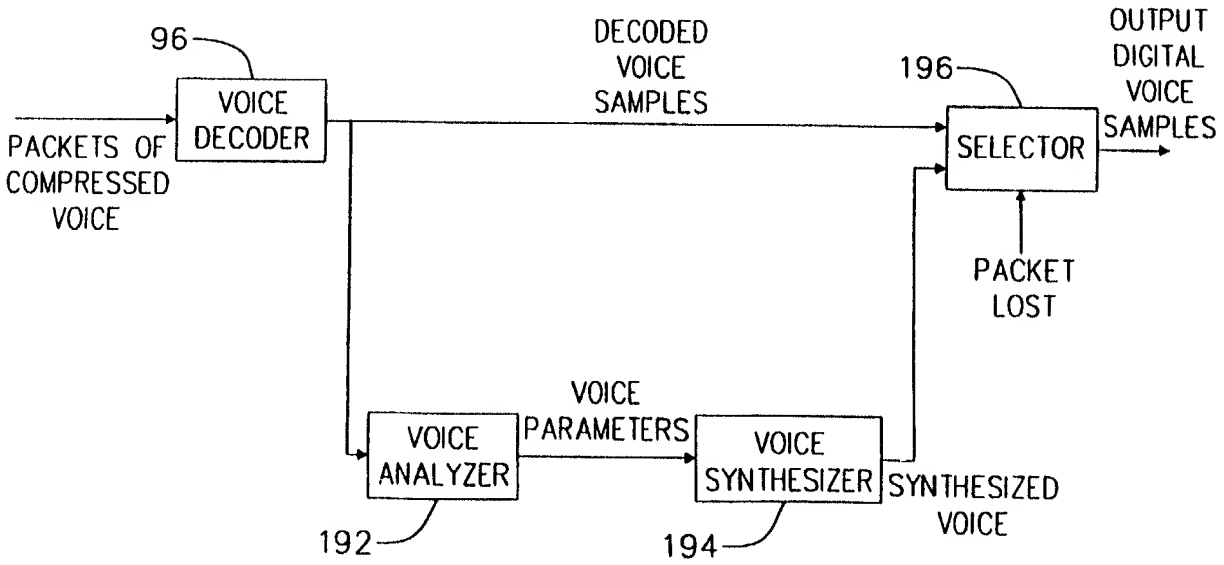

96
VOICE DECODER
PACKETS OF COMPRESSED VOICE
DECODED VOICE SAMPLES
196
SELECTOR
OUTPUT DIGITAL VOICE SAMPLES
PACKET LOST
VOICE ANALYZER
192
VOICE PARAMETERS
VOICE SYNTHESIZER
194
SYNTHESIZED VOICE

Figure 42

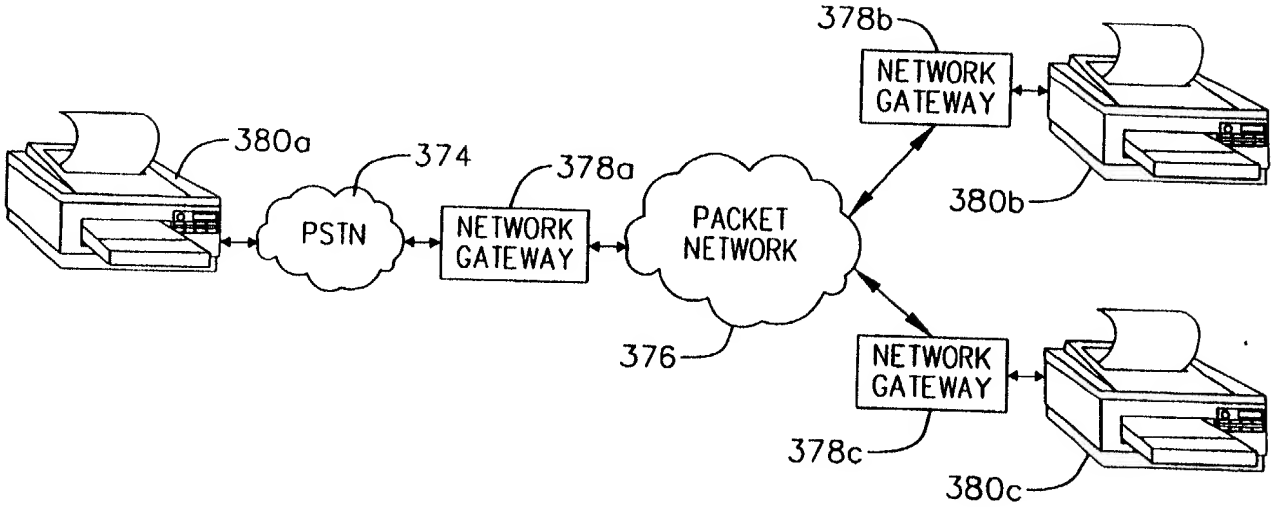

378b
NETWORK GATEWAY
380a
374
378a
PSTN
NETWORK GATEWAY
PACKET NETWORK
380b
376
NETWORK GATEWAY
378c
380c

Figure 43

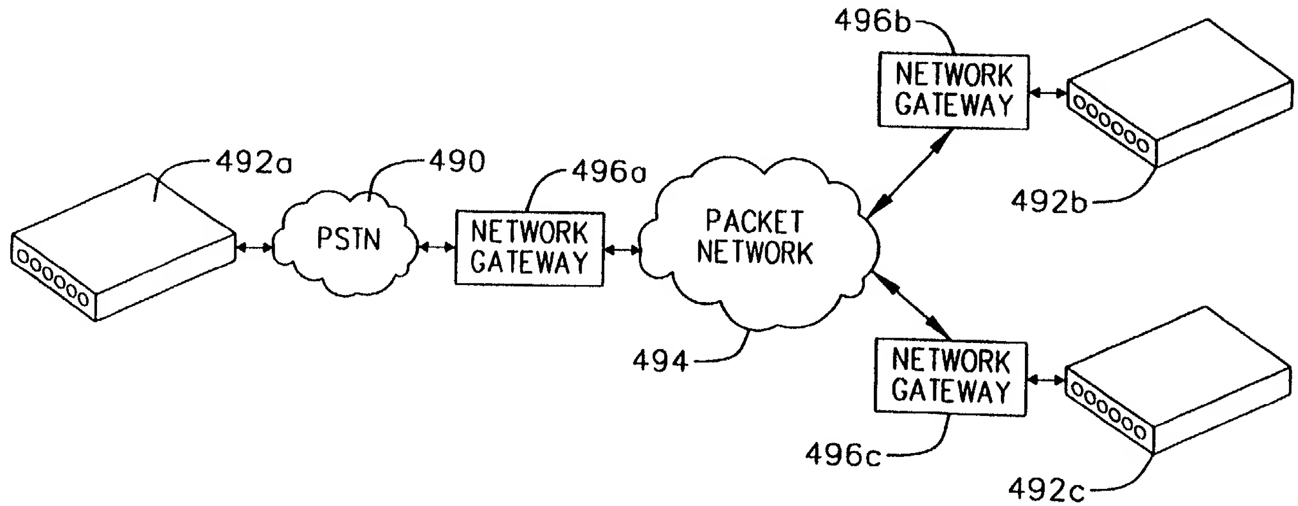

492a
490
PSTN
496a
NETWORK GATEWAY
PACKET NETWORK
494
496b
NETWORK GATEWAY
492b
NETWORK GATEWAY
496c
492c

Figure 44

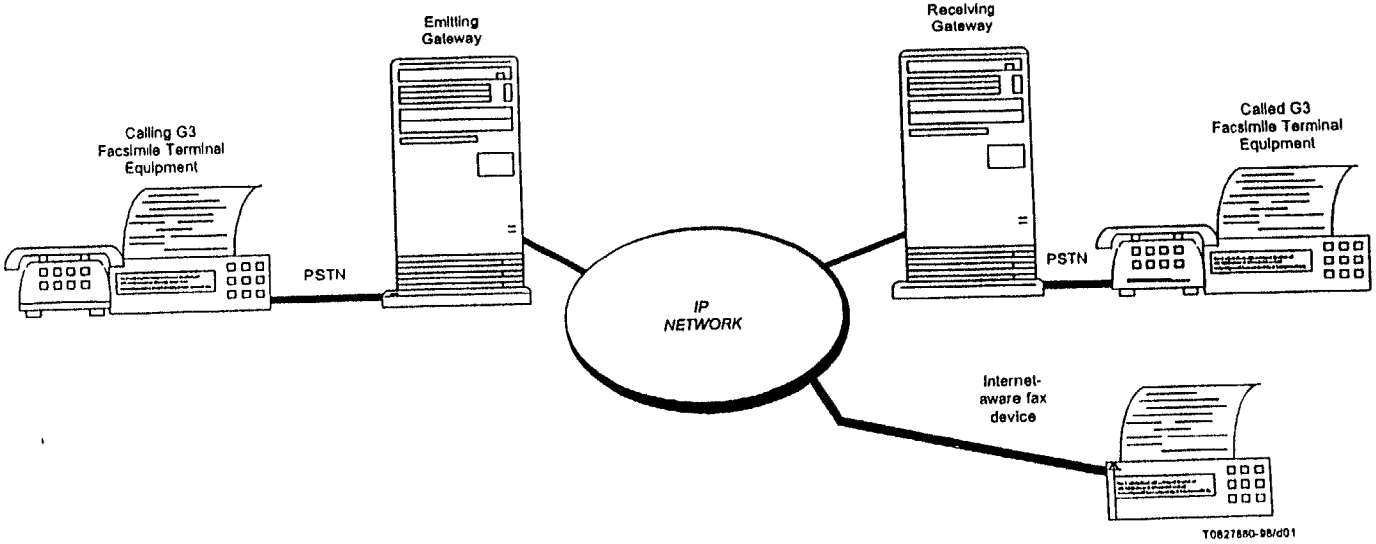
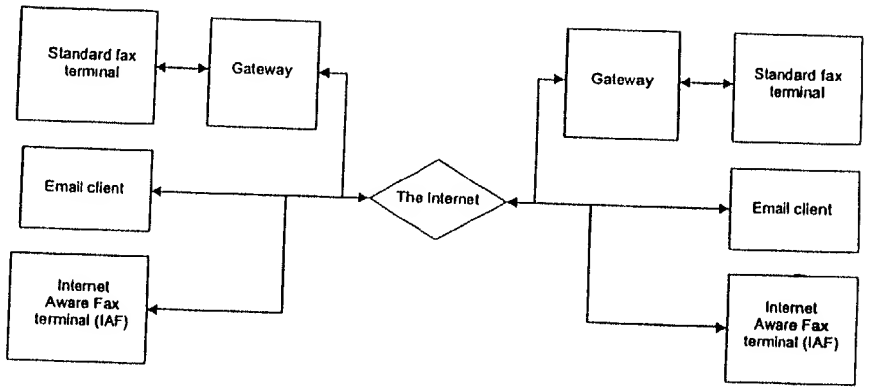

Emitting
Gateway
Receiving
Gateway
Calling G3
Facsimile Terminal
Equipment
Called G3
Facsimile Terminal
Equipment
PSTN
PSTN
IP
NETWORK
Internet-
aware fax
device
T0627880-98/d01

Figure 45



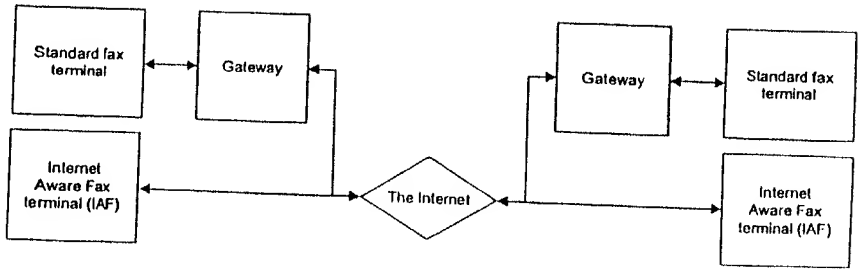


Figure 46

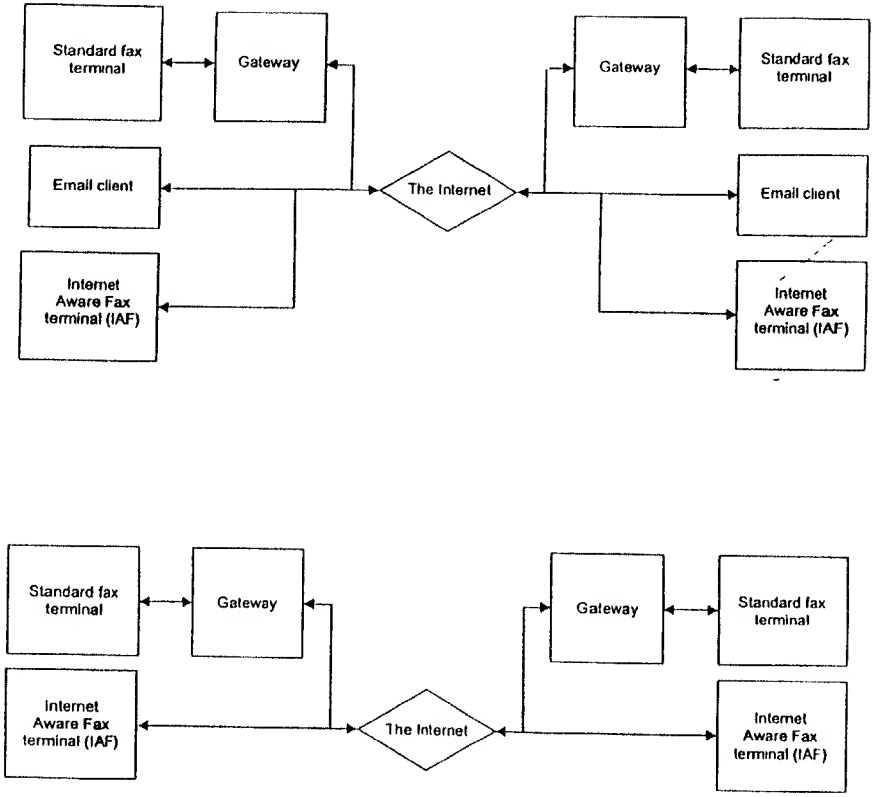
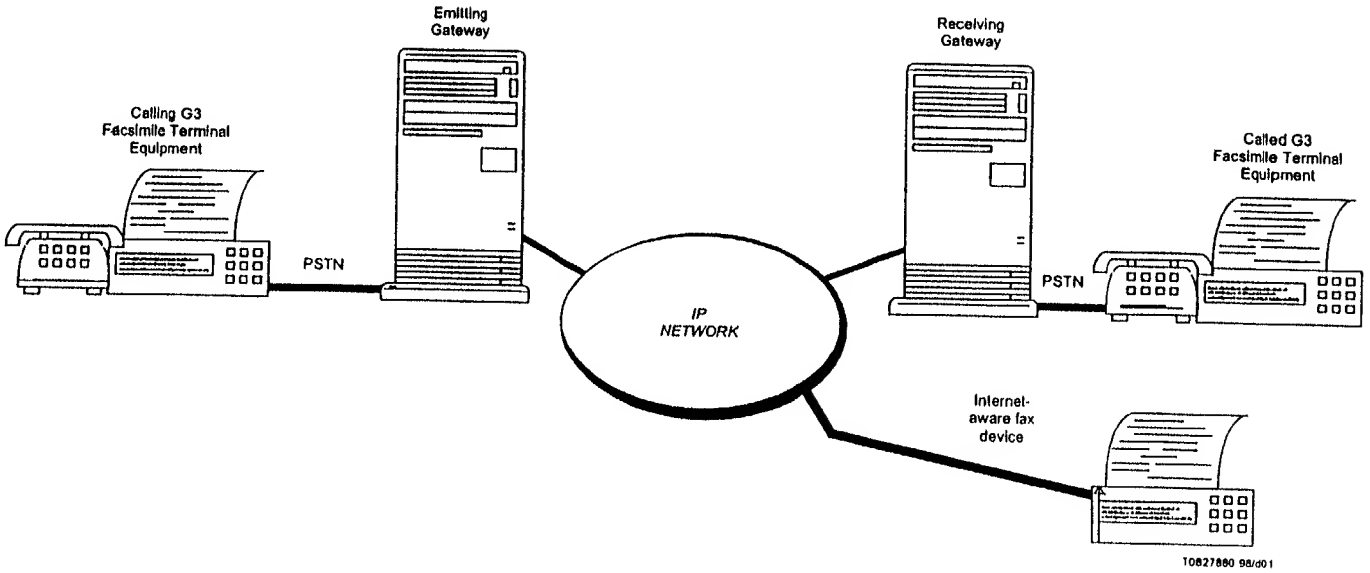


Figure 47


Emitting
Gateway
Receiving
Gateway
Calling G3
Facsimile Terminal
Equipment
Called G3
Facsimile Terminal
Equipment
PSTN
PSTN
IP
NETWORK
Internet-
aware fax
device
T0827880 98/d01